

✓ **QuickKeys 2.1.3**
CE updates premier macro program

✓ **PosterWorks 3.0**
The tool for bigger output

✓ **Prograph extensions**
Help in integrating C, Pascal code

See Page 49

Cyclone, Tempest to put new spin on multimedia

'040 and DSP support speech, camera option

By Henry Norr

Cupertino, Calif. — The new-generation 68040-based Macs due this summer will represent a dramatic break from past Mac architectures, but you won't know that from looking at their exteriors.

The larger of the two machines, code-named Cyclone, will come in the same metal minitower case as the Quadra 800, while its junior partner, dubbed Tempest, will share the low-slung case of the Centris 610, sources said.

Several new details about the two multimedia-oriented models emerged last week:

► **Minicam.** For both models, Apple will offer a miniature video camera that can be mounted above

the user's monitor or moved about on the end of its cable to take pictures of objects or documents. Taking advantage of the 32-bit digital signal processor (DSP) built into the systems' logic boards, the camera will be able to put an image measuring 360 by 288 pixels, with 256 gray levels, on the screen.



While the built-in lens is designed for general use, users will be able to install supplementary lenses that can record detail as fine as the wire bonds on an integrated circuit, sources said. The camera is expected to cost between \$150 and \$250.

► **Speech recognition.** The systems will ship with all the software needed to put Apple's Casper voice-recognition technology to work; users apparently will have to purchase an option-
See Cyclone, Page 115

Apple mobilizing new line with mix of Mac, Newton OS

By Mitch Ratcliffe

San Jose, Calif. — The mobile-computing revolution will blur the lines between the Macintosh and Newton operating systems, Apple CEO John Sculley told the mobile93 conference here last week.

Apple will mix and match elements of the Newton and Mac interfaces in various mobile products, Sculley said, adding that the company's support for mobile users will rely heavily on store-and-forward messaging capabilities in General Magic Inc.'s Telescript communications programming language and the AOCE (Apple Open Collaboration Environment).

Promises of products yet-to-be-shipped were the currency of the moment at the gathering of vendors, investors and corporate users. Vendors trumpeted their visions of mobile products and services that will ship later this year and early in 1994, among them:

► **Newton add-ons.** Sculley said
See mobile93, Page 116

AppleLink to add info to serve mobile users

Apple to offer clients for Windows, Newton

By Nathalie Welch and Mitch Ratcliffe

San Jose, Calif. — Apple's on-line communications system, AppleLink, soon will become a leading outpost of the emerging information economy, the company predicted last week.

Apple Online Services, a part of Apple's Personal Interactive Electronics division, is working to add a variety of new consumer-oriented services, such as news, weather and entertainment information, plus transaction services such as on-line banking and software sales. Communications technologies developed

by America Online Inc. of Vienna, Va., and General Magic Inc. of Mountain View, Calif., will be incorporated into the system to enable the new services, Apple said.

"We're going into the on-line services business," Apple CEO John Sculley told the mobile93 conference here last week. "[AOS] may become Apple's largest business by the end of the decade."

Until now, AppleLink has been used primarily for the exchange of computer-oriented messages and files among Apple employees, developers, dealers and, in recent years, users. With 52,000 subscribers in 52 countries, the service currently is dwarfed by broader-based competi-

See AppleLink, Page 116

Tech Analysis

Buyers uncertain about FPU value

By Robert Hess

Buyers picking out new Macs are hearing a question many may have trouble answering: Would you like an FPU with that?

An FPU (floating-point unit) improves performance on noninteger math used in scientific, trigonometric and transcendental calculations. While these operations can be performed in software on a standard CPU, they are far faster with an FPU.

With the 68020 and 68030 CPUs, the FPU is a separate chip, often called a math coprocessor. Motorola's 68020 works with a 68881 FPU, and the 68030 works with the 68882. On the '030-based Color Classic, IIsi, LC III, IIfx and Performa 600 an FPU chip is optional.

The Centris computers complicate the situation by using two versions of Motorola's 68040: the 68RC040 and the 68LC040. The only difference between the two is that the 68LC040 doesn't have the FPU circuitry that is built in to the 68RC040. The Centris 610 and low-end 650 use the 68LC040, and no FPU upgrades are available from

Apple, although the 68LC040 CPU may be replaced by a 68RC040 after purchase. According to Apple, such upgrades do not block any of the slots or cause extreme heat buildup inside the Mac.

See FPU, Page 115

FPU options

► FPU built in

68040

► No FPU

► Can be replaced by full '040

68LC040

► FPU available through separate 68882 chip

68030

► High-end '030 Macs come with '882; most others allow addition of '882 via socket or slot

68882

ON schedules cross-platform Meeting Maker

Speedier XP version links Mac, Windows

By April Streeter

Cambridge, Mass. — Recognizing that the schedules of Macintosh and Windows users do overlap, ON Technology Inc. in April will release a new version of Meeting Maker that works across the two platforms.

Meeting Maker XP will let users connected to a Mac or Windows server schedule group events and

arrange personal calendars. In environments using a Windows server, Novell Inc.'s NetWare will be required.

XP is based on a new distributed architecture that will let roaming users work off-line and permit in-house workers to keep working on schedules even if the network fails. When connections are re-established, changes to client and server copies are reconciled.

The price has not been determined, but the company said it will be higher than the current version, 1.5, which sells for \$495 for a five-

user version and \$895 for 10 users.

According to the company, Meeting Maker XP will improve performance significantly because schedules are kept on users' workstations, as well as the server. Unlike the current Meeting Maker, however, the XP version will work only in single-server environments. A server can support about 250 users, the company said.

Beta testers praised the upgrade's performance and cross-platform capabilities.

"It's pretty zippy," said Stephen Erde, director of academic computing at Cornell University's Medical School in New York and an XP beta tester. "We have our room schedules on Meeting Maker, and PC users [can] now get to them. Server-to-server scheduling will be nice, but I'm happy for now."

See Meeting Maker, Page 115

Introducing DayStar's Turbo 040™... the only 68040 accelerator that does it right!

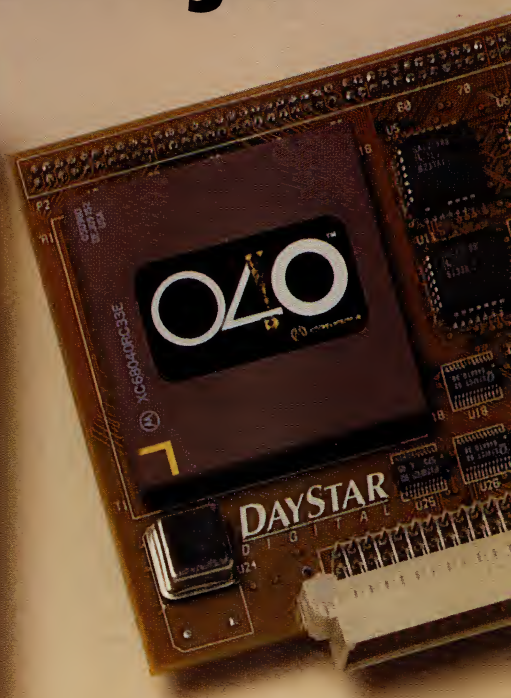
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OTHER 040's	DAYSTAR'S TURBO 040	
NO	YES	Plug In and Startup (No System Install)
NO	YES	Saves NuBus Slots For Other Boards
NO	YES	Compatible With All Video Cards
NO	YES	Supports Non-NuBus Macs
NO	YES	Compatible With All QuickDraw Accelerators
NO	YES	Optional 128K Cache For More Speed
NO	YES	Compatible With Apple Virtual Memory
NO	YES	Low Cost, No Penalty Upgrades
NO	YES	Compatible With Apple A/ROSE† Cards
NO	YES	Does Not Require Additional Memory
NO	YES	Compatible with Apple QuickTime
NO	YES	Free Storm PicturePress 2.5 Software
NO	YES	Compatible With AppleTalk Remote Access
NO	YES	Full AppleTalk/EtherTalk Network Support
NO	YES	Compatible With Apple MIDI
NO	YES	Full-Color Installation/User Manuals
NO	YES	Compatible With All Sound Applications
NO	YES	3 Year Warranty & Toll-Free Tech Support
NO	YES	Compatible With All Scanners
NO	YES	Compatible With Apple's "Installer" Application
90	0*	Total Number of Compatibility Problems

* As on the Macintosh® Quadra, using the Apple 8-24 GC Card requires the user to turn off 68040 data caching. 100% compatible with System 6 and System 7 (A/UX not supported).
† A/ROSE- Apple Real Time Operating System Environment includes Apple Coax/Twinax Card, Ethernet NB Card, MacAPPC, MACDFT, MCP Card, Serial NB Card, SNA,PS, TokenTalk NB Card.



The Turbo 040 has a built in math chip and is available in two speeds - 25 MHz (Quadra 700 speeds) and 33 MHz (Quadra 950 speeds). Like the Quadra, the Turbo 040 also has an optional 128K cache card to squeeze out every bit of performance.

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HP plans 17-ppm laser, four-color Level 2 inkjet

By Matthew Rothenberg

Cupertino, Calif. — Hewlett-Packard Co. is drafting plans for its next generation of output devices, sources said.

Besides the LaserJet 4LM, a 4-page-per-minute, 300-dpi laser printer based on a new engine from Canon U.S.A. Inc. of Lake Success, N.Y. (see MacWEEK, Feb. 15), the new printers reportedly will include:

► **The LaserJet 4Si MX**, a 17-ppm network laser printer that incorporates a new 600-dpi Canon engine. The new printer, reportedly scheduled to ship in April for about \$3,500, will include Adobe PostScript Level 2 and 35 Type 1 fonts,

as well as PCL 5, sources said. It also reportedly will come with LocalTalk, serial and parallel interfaces.

The 4Si MX will be based on an Intel i960 RISC processor, sources said, and it will ship with two 500-sheet paper trays.

► **The 1200C/PS**, a four-color Level 2 inkjet model reportedly scheduled to ship in May for about \$2,000. The new color printer can output about 1 ppm, sources said.

Sources also said HP is working on an E-size color inkjet plotter and 600-dpi color flatbed scanner, both of which should be available later this year.

HP declined to comment. □

Aldus: SuperCard's future not with us

Company promises to ensure support

By Raines Cohen

Seattle — Aldus Corp. last week said it will sell the SuperCard multimedia authoring tool to a company that can focus on it.

Aldus' San Diego-based consumer division (formerly Silicon Beach Software Inc.), which is responsible for SuperCard, plans to focus exclusively on "high-value consumer products such as SuperPaint, Personal Press and IntelliDraw," the company said in a press release.

"We believe the organization's consumer focus is not a good fit with ... SuperCard," the release said.

Aldus said it has initiated discussions with other companies but will sell SuperCard only to a company that agrees to develop the product and support current users.

"Our goal is to expedite the divestiture in a way that will not compromise the long-term needs of SuperCard and its loyal users," the company said.

Aldus promised to continue to provide full technical support for the product until it is sold, even though development has been suspended.

Some SuperCard users have been vociferous in protesting the company's lack of development, marketing and support for the product, to the point of carrying signs at Macworld Expo last summer and organizing on-line. □

Cellular data specification due by spring

By Mitch Ratcliffe

San Jose, Calif. — The cellular communications scheme that Apple is banking on for nationwide mobile networking will reach developers by July.

The cellular digital packet data (CDPD) specification will be issued this spring in three stages to facilitate comments from developers, according to the cellular providers that will build the new technology into their networks. The final version is slated for release in July. The group includes McCaw Cellular Communication Inc., Ameritech Mobile Communications Inc., Nynex Mobile Communications and five other cellular network companies.

The specification will let cellular

networks support voice and packetized data simultaneously. CDPD can establish a virtual circuit for mobile devices; the network then switches data on and off idle channels between voice calls. The scheme should result in better use of network bandwidth and apparently seamless connectivity for remote users.

"CDPD is the computer industry's great white hope for universal connectivity," said Alan Reiter, editor of the Alexandria, Va.-based Mobile Data Report and En Route Technology.

Apple has demonstrated a CDPD-compatible version of its AppleTalk Remote Access communications software (see MacWEEK, Nov. 23, 1992). □

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OOP developers get peek at future

Apple trots out tools at MADA meeting

By Matthew Rothenberg

San Diego — MADA, the former MacApp Developers' Association, looked beyond the Mac to new and different platforms at its annual conference here last week.

Among the major topics at MADAcon '93 were:

► **SK8.** Kurt Schmucker of Apple's Advanced Technology Group demonstrated SK8, a research project that he referred to as the Object-Oriented Dynamic Authoring Language.

According to Schmucker, SK8, which is built on Object LISP, could form the basis of an end-user authoring tool that takes advantage of object-oriented principles and overcomes some "roadblocks" of HyperCard. For example, SK8 lets users

design their own objects and apply sophisticated color graphics controls to objects without requiring external commands (XCMDs). In addition, its scripts are much smaller and less complex than HyperCard.

Sources said some of SK8's functions eventually may find their way into an update to HyperCard, which Apple recently re-acquired from Claris Corp.

► **Bedrock.** Apple restated its support for Bedrock, the cross-platform programming framework it is developing jointly with Symantec Corp. of Cupertino, Calif. The companies said they will seed a limited release of Bedrock to 50 to 100 developers at Apple's Worldwide Developers Conference '93 in May, ship a beta version in the third quarter, and deliver the final version in the fourth quarter for the Mac and Windows platforms. Support for PowerPC will follow shortly afterward. Apple and Symantec also said they plan to

release a version of the framework for a Unix graphical environment.

Features under development include support for Apple events and AppleScript. Although Apple will continue to fix bugs in MacApp, the company said all new system-software features will be implemented in Bedrock, not MacApp.

Bernadette Jolicoeur of Apple said the Bedrock team is "actively investigating" implementing AppleScript and Apple events for Windows. Apple and Symantec demonstrated Bedrock and the BEDROC resource editor parsing C++ header files and compiling the same 25,000-line source code for Windows and the Mac.

► **Newton.** James Joaquin, Apple product marketing manager for Newton core software and tools, presented a sneak preview of development tools that will be used to create applications for the company's new class of portable devices. According to Joaquin, Apple will provide developers with more information at WWDC '93.

Joaquin said the first Newton will be available by midyear for less than \$1,000; the first media for delivering Newton software will be PCMCIA cards or installation from a desktop Mac via LocalTalk.

The Mac will be the initial platform for Newton software development, he said. "Over time, [programmers] will see development tools native on Newtons," Joaquin said, but they "won't see those Day One." □

MADA gets BETA from Denmark

By Matthew Rothenberg

Cupertino, Calif. — MADA, the association of object-oriented programmers, is going into the publishing business with a new development environment imported from Scandinavia.

The group announced last week that it has become the exclusive U.S. distributor of the Mjolner BETA System, an object-oriented system for the Mac and several versions of Unix. BETA was developed by Mjolner Informatics of Aarhus, Denmark, part of the pioneering research group that developed Simula, the original object-oriented language, in the 1960s.

BETA uses a syntax structure called a pattern as the basis for its classes, procedures, functions, co-routines, processes and exceptions. Developers can specify virtual patterns and subpatterns that resemble virtual procedures and subclasses, respectively, in C++.

Features include persistent objects, native code generation, automatic garbage collection, compilation of individual code fragments and interfaces to C and assembly language, as well as the Mac Toolbox and XWindow.

Neil Ticktin, president of Xplain Corp. of Los Angeles, said BETA "looks somewhat esoteric." Because it requires developers to learn a whole other object-oriented language, he said, BETA "doesn't look like it's going to be very important."

An introductory Macintosh kit that includes the compiler, basic

libraries and Mac Toolbox interface objects costs \$295. The full Mac environment is \$795.

The Mac version of BETA requires Macintosh Programmer's Workshop 3.2 and 5 Mbytes of RAM.

MADA is at 10062 Miller Ave., Suite 202-B, Cupertino, Calif. 95014. Phone (408) 253-2765; fax (408) 253-2767. □

Presenting Now adds LAN screen sharing

By Henry Norr

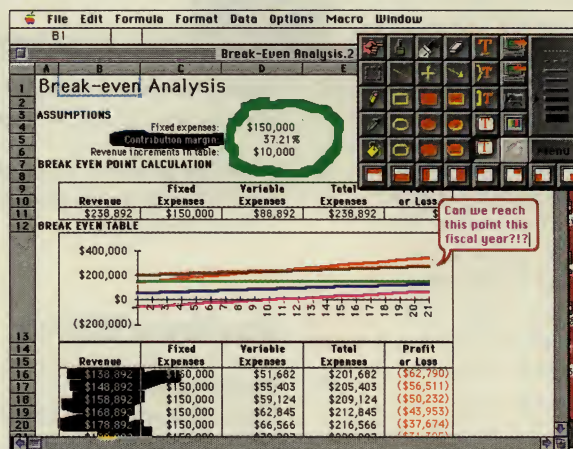
Owings Mills, Md. — ISM Inc. next month will present Version 3.0 of Presenting Now, a package designed to bring spontaneity and interactivity to Mac-based presentations.

The \$128.95 program lets users annotate and enhance screens generated with any Mac application, including presentation packages, charting programs and spreadsheets. The new version consists of a small extension and a background application.

At the press of a user-definable hot key, Presenting Now freezes the screen and brings up palettes of tools for drawing lines and arrows; adding highlights; covering up or repainting portions of the screen; and entering text directly on the image or in braces, brackets, boxes or balloons.

Version 3.0, which requires System 7, will add:

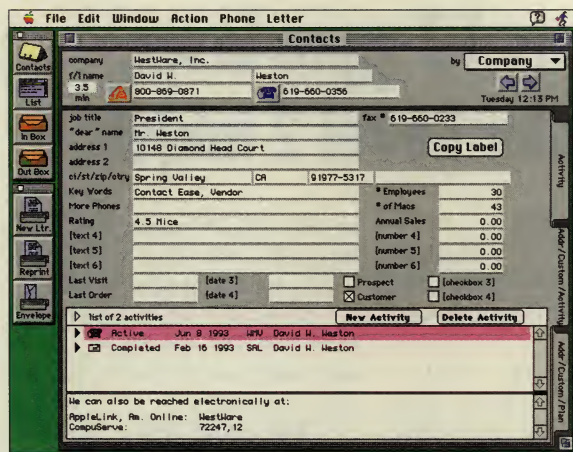
► **Screen sharing.** On a network any Presenting Now user will be



able to become a server for up to five clients running their own copies of the program. Anything drawn on the server screen also will be displayed on the client screens.

► **Journaling.** The program will let users record actions and replay them in sequence.

► **Publish and subscribe.** The Picture Library, the programs' private



Contact Ease 2.0 includes a Smart Windows feature, which automatically resizes the layout to show more or less information, depending on the size of the screen.

WestWare speeds Contact Ease, adds synchronization feature

By Kirsten L. Parkinson

Spring Valley, Calif. — WestWare Inc. this week will ship Contact Ease 2.0, an upgrade that adds synchronization capabilities and speed improvements to the sales-automation program.

Contact Ease, a \$395 application for tracking contacts and activities and implementing sales strategies, includes a contact database, to-do list and word processor. The program can automatically remind users of scheduled phone calls and generate mail-merged letters based on a user-defined plan.

New features in Version 2.0 include:

► **Performance improvements.** The company has completely rewritten Contact Ease using the Inside Out II database engine from Sierra Software Innovations Inc., resulting

in performance that is 5 percent to 40 percent faster, WestWare said.

► **CyberSwap.** Version 2.0 lets users synchronize changes between a master database and copies being used in the field.

Users can create a separate file incorporating all changes made to the database since the last Change File was generated, then distribute those changes like any other file. Recipients can then consolidate the changes into their own database.

► **Smart Windows.** A Smart Windows feature automatically adjusts the layout based on monitor size. Contact information is divided into four cards on smaller screens; a larger monitor can display all information on a single card.

Version 2.0 does not include the previous version's Utilities, which contained a report generator and search utilities, but the company said it will return in Version 2.1.

"I have been looking forward to the CyberSwap feature for a long time," said Mark Stringfellow, owner of MacHealth Computer Systems of Quakertown, Pa. "Now, instead of sending leads out to my outside sales people, I'm going to give them a copy of my database, and they will be able to download information that is new to them. It will be a big timesaver and keep us from losing information."

A multi-user version of Contact Ease 2.0 will ship next month for \$1,495 for five users; the multi-user version also requires the \$495 LockServer multi-user-management application.

A single-user upgrade is \$99; a five-user upgrade that includes LockServer is \$299. Users who purchased the previous version after Dec. 18, 1992, can upgrade free.

WestWare Inc. is at 10148 Diamond Head Court, Spring Valley, Calif. 91977-5317. Phone (619) 660-0356 or (800) 869-0871; fax (619) 660-0233. □

ISM's Presenting Now provides a variety of tools that allow users to highlight key points and add text annotations to screens created in any Mac application.

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MacSecure takes control of desktop

Shell lets managers customize menus

By Leonard Heymann

Minneapolis — Learning Performance Corp. next month plans to release a new version of its alternative desktop software with enhanced security features and administrator controls.

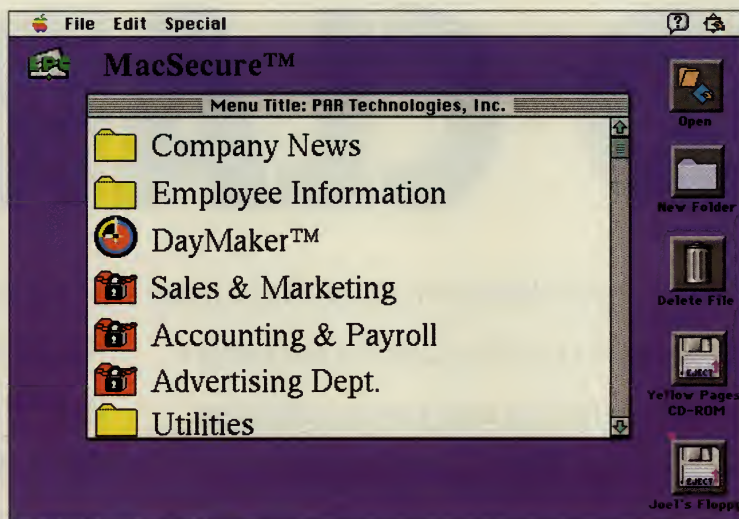
MacSecure 1.7, formerly called EasyShare Mac, masks the Finder with an alternative desktop that uses enlarged icons to make it easier for users to find and launch programs. Password protection can be applied to hard disks, the Finder, the Chooser and control panels.

Enhancements in MacSecure 1.7, priced at \$99.95, will include:

▶ **Simplified user interface.** Larger buttons will let users create new folders, eject or erase floppy disks, and eject CD-ROMs. The new version also will support full color; desktop patterns selected in the control panel will fill the background of the MacSecure menu.

▶ **Setup control.** Administrators will be able to create customized menus designed for different users of the same machine. An Auto Find feature will help locate files to be placed into a MacSecure menu. Administrators will be able to prohibit users from shutting down and printing.

▶ **Security.** The new version can be configured to save each user's



The new version of MacSecure is being pitched as a business productivity tool since menus can be tailored for the tasks of individual users.

documents to specific folders on the hard drive. Administrators will be able to assign different passwords for each MacSecure menu.

The update also will include an easy installer program, a screen saver and the freeware virus-protection program Disinfectant.

As in the previous version, the program will offer write protection of hard disks, leading users to save their work on a floppy; it also will let administrators update customized menus on networked machines by changing them on the server.

MacSecure has its roots in the education market, where some 250,000 students use it daily, according to the company. Now

Learning Performance is pushing MacSecure into the business arena, touting it as a tool allowing administrators to create menus that include only those programs and files needed for an individual's tasks.

Apple's \$59 simplified desktop, At Ease, is aimed largely at the home and education market. At Ease offers fewer security options than MacSecure.

Upgrades will be free. Six-user packs will cost \$495, and 10-packs will be \$795. Site licenses are available for educational users.

Learning Performance Corp. is at 2850 Metro Drive, Suite 413, Minneapolis, Minn. 55425-1405. Phone (612) 854-2730; fax (612) 854-8975. □

WordPerfect folds Grammatik, new features into interim update

Version 3.0 not due until end of 1993

By Lisa Picarille

Orem, Utah — WordPerfect Corp. this week will deliver an interim upgrade to its word processor, adding grammar checking and a few minor enhancements.

WordPerfect 2.1.3 adds Grammatik 5 for Macintosh, a grammar and spelling checker acquired through WordPerfect's purchase of Reference Software International.

Users have to close WordPerfect files before running the grammar-checking software.

The 2.1.3 update also adds spell-checking features that identify the page and line number of misspelled words.

Version 3.0 of WordPerfect for the Macintosh, expected to ship by year-end, should let users

access Grammatik from WordPerfect's menus.

Version 3.0 also is expected to improve cross-platform support, add a table editor and equation editor, and take advantage of System 7.1 features such as AppleScript and AOC (Apple Open Collaboration Environment).

Users of WordPerfect 2.1.x can upgrade to Version 2.1.3 for \$16. WordPerfect 1.x and 2.x users can buy disk-only upgrades for \$39 or disks and documentation for \$89.

The company is offering a \$129 competitive upgrade for users of Microsoft Word, Claris Corp.'s MacWrite II, T/Maker Co.'s WriteNow, Borland International Inc.'s FullWrite and Nisus Software Inc.'s Nisus.

WordPerfect Corp. is at 1555 N. Technology Way, Orem, Utah 84057. Phone (801) 225-5000; fax (801) 225-5077. □

Useful Software lightens up, ships playback-only voice processor

Low-priced offering lacks record features

By Nathalie Welch

Beverly Farms, Mass. — Useful Software Corp. this month released a playback-only version of its dictation software.

Useful Voice Processor Lite 1.1, priced at \$99, provides the same features for listening to and transcribing

ing recorded speech as its more full-featured sibling, the \$179.95 Useful Voice Processor 1.1. But the new release lacks the higher-end program's ability to record, import and export nds.

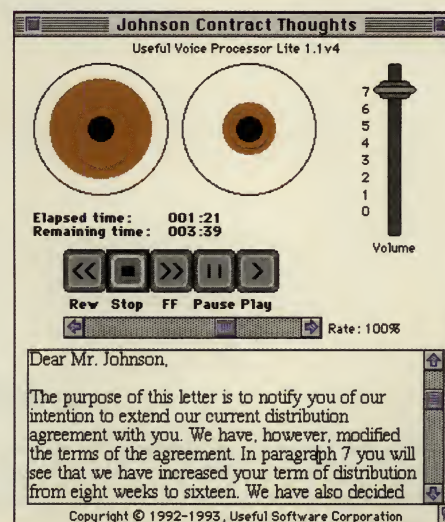
Aimed at sites that have more people transcribing recordings than creating them, the Lite version must be used in conjunction with material recorded with Useful Voice Processor.

Useful Voice Processor compresses sounds as they are recorded using Apple's MACE (Macintosh Audio Compression Expansion) and a proprietary algorithm that eliminates pauses.

The Lite version offers keyboard navigation of the "tape" and provides variable-rate playback. The software also can automatically stop the tape at pauses in the recording, making data entry easier.

Users can change font style and size in the transcription window; transcription files are compatible with all major word processors, the company said.

Useful Software Corp. is at 34 Hart St., P.O. Box 5560, Beverly Farms, Mass. 01915-0511. Phone (508) 922-7272 or (800) 666-9828; fax (508) 922-0413. □



Useful Software's Useful Voice Processor Lite 1.1 provides a word processing window for transcription of recordings created with the company's dictation software. Users can navigate the recordings with keyboard commands or on-screen buttons.

DayStar PowerCache to speed LC III, Color Classic

By Neil McManus

Flowery Branch, Ga. — DayStar Digital Inc. this month will ship adapters that allow Mac LC III and Color Classic users to accelerate their new machines with the compa-

ny's Universal PowerCache cards.

The LC III adapter, priced at \$49, takes advantage of the new CPU's 32-bit processor direct slot to speed processing.

The Color Classic adapter, also

\$49, fits the LC, LC II and Performa 400 as well.

DayStar's Universal PowerCache cards, based on the 68030 processor, are available in 33-, 40-, and 50-MHz versions with optional 68882 math coprocessors. Prices range from \$449 to \$999, depending on configuration.

Adapters are required for the Classic, SE, SE/30, LC, LC II, Mac II, IIfx, IICx and Performa 400. Users who switch to another Mac model can exchange their adapter for no charge. No adapter is needed for the Mac IIfx, IIfx, IIfx and Performa 600.

DayStar last week also shipped a 33-MHz version of its Turbo 040 accelerator for the Mac IIfx. The \$1,599 card requires a \$49 DayStar adapter.

All DayStar cards include a three-year warranty and 30-day money-back guarantee.

DayStar Digital Inc. is at 5556 Atlanta Highway, Flowery Branch, Ga. 30542. Phone (404) 967-2077 or (800) 962-2077; fax (404) 967-3018. □

For the record

Last week's preview of the Color Classic contained several mistakes. The machine's single SIMM slot is, according to Apple, a "dual slot" that can hold two SIMMs. The resolution of the internal color screen is 512 by 384 pixels.

In last week's issue, the introductory price for Quasar Knowledge System Inc.'s Smalltalk Agents should have been \$495.

The correct price for Technology Works Inc.'s HubWorks expansion card, reported on Feb. 8, is \$679. The company's phone number is (512) 794-8533.

The Feb. 1 issue provided inaccurate fax transmission rates for APS Technologies Inc.'s APS PowerModem. The device sends faxes at 9,600 bps and receives at 4,800 bps.

The "Document Management" infographic in the Feb. 1 issue may have given the impression that Frame Technology Corp.'s FrameMaker does not operate in a cross-platform environment. Fully file-compatible versions of FrameMaker are available for Macintosh, DOS, Windows and Unix.

Introducing SuperATM. Now You Can Move It Without Losing It.

TRAVEL WISE

VOLUME 10 ISSUE NO. 3

SIX-MONTH TRAVEL PLANNER

	JAN	FEB	MAR	APR	MAY	JUNE
LANAI						
Hours of daylight	11:02	11:27	12:01	12:37	13:07	13:23
Afternoon temperature (°F)	73°-78°	73°-78°	73°-78°	73°-78°	75°-90°	77°-80°
MIDDLEBURY						
Hours of daylight	9:19	10:27	11:54	13:25	14:44	15:26
Afternoon temperature (°F)	59°-66°	63°-72°	69°-72°	74°-78°	80°-85°	80°-95°
RONDA						
Hours of daylight	9:55	10:49	11:58	13:09	14:10	14:42
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5. Foldable tote bag

6. Small flashlight

7. Liquid detergent

8. Insect

repellent/bite

ointment

9. Heavy-duty tape

individual
railroads.
continued page 2

Emergency Items

1. Aspirin/antacid
2. Band-aids/first-aid ointment
3. Zip-top plastic bags
4. Bottle opener/corkscrew
5. Foldable tote bag
6. Small flashlight
7. Liquid detergent
8. Insect repellent/bite ointment
9. Heavy-duty tape

When for business thing is to w precious your des feeling tired or are six si steps that you can

Leave IT TRAVEL WISE

Riding the Rails

There's no more economical, efficient and fun way to travel in Europe than by train.

To use trains most effectively, plan your progress so you can avoid unnecessary backtracking. Trains are also ideal for day excursions. You can get condensed national or regional timetables from your travel agent or from the local office of individual railroads.

Emergency Items

1. Aspirin/antacid
2. Band-aids/first-aid ointment
3. Zip-top plastic bags
4. Bottle opener/corkscrew
5. Foldable tote bag
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7. Liquid detergent
8. Insect repellent/bite ointment
9. Heavy-duty tape

Leave Jet Lag Behind

Whether you travel for pleasure or for business, the last thing you want is to waste precious time at your destination feeling overly tired or ill. Here are six simple steps that you can take to help keep jet lag permanently off your itinerary:

1. Avoid the rush. Arrive at the airport at least an hour before your flight is scheduled

to depart, so you can check in and get settled with time to spare. If you board a cool airplane when you're overheated, the abrupt temperature change can increase your chances of feeling unwell.

2. Adjust your timing. As soon as you take off, set your watch to your destination's time zone. It's a simple way to get mentally prepared for arrival.

3. Stay hydrated. Alcohol is much more potent than on the ground. To avoid alcohol, drink plenty of water.

This ever happen to you?

Someone sends you a document and when you pull it up on your computer or print it, it looks like alphabet soup: letters floating off, no formatting, and type that's...that's... what is that Geneva? Courier?

What happened?

You're missing SuperATM™ software from Adobe.

You see, until now, if you didn't have the same fonts as the author of the document, you didn't have a document. You had a problem.

But SuperATM is going to change all that.

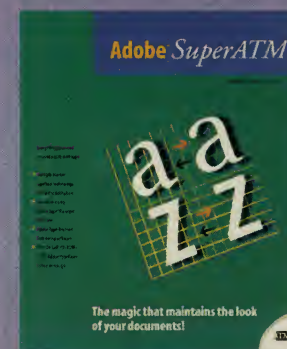
With SuperATM, people can send you documents that you can view, print, even edit, in all their original glory.

Magic?

No, but close. SuperATM creates "substitute fonts" that accurately maintain the look of your formatted text.

But that's not the only reason it's called super. It's also a super value. SuperATM includes Adobe® Type Reunion™ font menu software, a new version of Adobe Type Manager™ software, five free typefaces, and Type On Call™, a CD-ROM with more than 1,350 typefaces that you can buy as you need them.

To get your copy or upgrade,* just call us: 1-800-83-FONTS (1-800-833-6687), Dept. B, ext. 3335 and order. Or see your local Adobe reseller. And don't ever worry about moving documents—and losing them—again.



*If you already have Adobe Type Manager, you can upgrade to SuperATM for just \$49. That's \$100 off the suggested retail price.



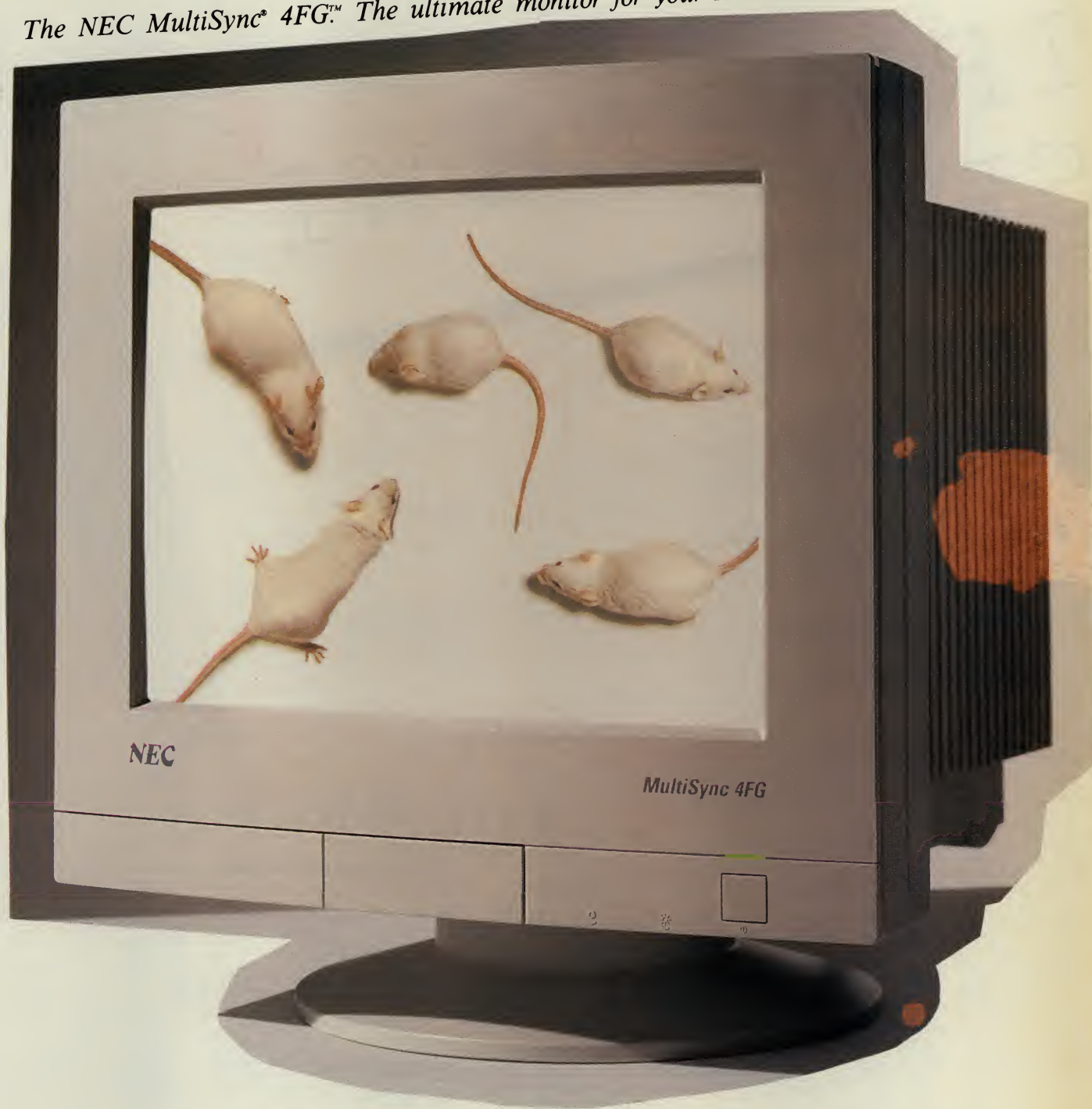
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Announcing a

At NEC, we've developed hundreds of computer products expressly for Mac systems: from our highly-acclaimed MultiSync monitors, MultiSpin™ CD-ROM readers and Silentwriter® laser printers, to our Professional Graphics Series, which includes our new 27" MultiSync 3PG data monitor and MultiSync 6PG and 9PG Projection Monitors for images as large as 25 feet.

The NEC MultiSync® 4FG™. The ultimate monitor for your Macintosh®.



*-MacUser Magazine
Aug. '92*

better mousetrap.

The NEC MultiSync® 3FGx™ monitor.

The least you should do for your Mac.*



In 1992, the only monitor to snag the coveted five-mice rating was an NEC monitor: the MultiSync 4FG. After running it and 13 others through the most rigorous technical evaluation they'd ever used for testing monitors, *MacUser* magazine concluded, "If you're looking for the sharpest display, the NEC MultiSync 4FG should be your top choice." What more can we say? Glad you asked.

Our **AccuColor™ Control System** prompted *MacUser* to make special mention of the "easy color adjustments." AccuColor lets you adjust on-screen colors, so if you're looking for mouse-tail pink, that's what you'll get.

If, however, color control is not a priority for you, you'll be very happy with NEC's MultiSync 3FGx monitor, which shares almost all of the 4FG's award-winning features. Both monitors produce sharp, bright images, crisp graphics and vibrant colors. An Invar shadow mask provides increased brightness without loss of focus.

Another big idea—the display area. The large 15" screen (13.8" active display area) coupled with FullScan™ capability for edge-to-edge images gives you a larger display area than typical 13" or 14" RGB monitors.

How do you make an NEC MultiSync monitor work with your Mac? Just plug it in, using NEC's free FG/Mac cable adapter. It works with the Mac's on-board video, so you won't need an add-in video board.*

Both monitors are compatible with the Mac® II family, Quadra™ series, LC's, PowerBooks™ and PC systems. So you can use just one monitor for both types of platforms. *MacUser* noted the "powerful and versatile controls make switching from a Mac to a PC a snap."


And to make these monitors as user-friendly as possible, we've included ergonomic features such as a tilt/swivel base and up-front user controls. Plus, our Reduced Magnetic Field™ technology meets the strict Swedish MPR II guidelines for magnetic field emissions.

There are lots of reasons for considering an NEC MultiSync monitor for your Mac—the sharp, bright images, the vibrant colors, the large display area, the flexibility, the compatibility—to name five. And the 🖱️🖱️🖱️🖱️🖱️ to name five more.

For more information on our award-winning monitors, call 1-800-NEC-INFO (in Canada: 1-800-343-4418). Or for a complete brochure via fax, call NEC FastFacts™ at 1-800-366-0476, request #62234.

*For Macintosh 640 x 480 resolution, just attach NEC's FG/Mac cable adapter and plug into: Macintosh IIfx, IIfx, LC, LCII, IIfx, IIfx, Quadra™ 700, Quadra 900, Quadra 950, Performa™ 400, Performa 600, PowerBook™ 160, PowerBook 180, and the PowerBook 210 and PowerBook 230 with either the DuoDock™ or MiniDock™. Or with an add-in video card: Macintosh II, IIfx, IIfx, PowerBook 140, PowerBook 145, and PowerBook 170. Get the 640 x 480 FG/Mac adapter free by calling NEC at (312) 622-7427 8:30AM-5PM CST.

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Because  is the way you want to go. **NEC**

Japanese ready multimedia tools

4D kit, Fuji viewer due in U.S. this year

By David Morgenstern

Tokyo — Despite the heavy presence of localized "J" versions of American software and hardware, Japanese users saw plenty of home-grown products, especially in the multimedia category, at Macworld Tokyo this month. Among those slated to ship in the United States within a year were:

► **MacViewer 2.0** from Fuji Photo Film Co. Ltd.'s Electronic Imaging Products Division. This application for accessing files created with the Fujix DS-200F digital camera system sells for 220,000 yen (\$1,840).

The camera uses 2-Mbyte flash-memory cards to store pictures using QuickTime JPEG (Joint Photographic Experts Group) compression. The cards can be read with the DP-100F, a 190,000 yen (\$1,580) SCSI-based external drive. An Adobe Photoshop plug-in lets users open the images directly in Photoshop. A U.S. version of the system is expected in late 1993 or early 1994.

► **4D Multimedia Tool Kit** from Factory Software, which lets developers integrate multimedia data types into applications written in ACI US Inc.'s 4th Dimension.

"Users of 4D software don't have the time or money to use fancy desktop video programs. They need to get



Aquazone, a tropical-fish aquarium simulation, "is a perfect vehicle for creating virtual life," said Arka Roy, software designer at the product's developer, Cracker Software.

things done in a hurry," said Yosuke Suzuki, the product's programmer.

The kit comes in four volumes. Volume 1, priced at 600,000 yen (\$5,000), allows display of PICT, PICS, QuickTime PICT, MooV, Encapsulated PostScript, TIFF and Photoshop files.

The three remaining volumes cost 250,000 yen (\$2,080) each. Volume 2 lets 4D applications control video and laser disc players, including RS-232C video controllers, Sony CVD-1000 and VISCA (Video System Control Architecture) decks; Volume 3 offers control of Epson 200, 400 and 800 scanners; Volume 4 offers control of the Fujix

DP-100F digital camera system.

A U.S. version is due by June.

► **Aquazone**, a tropical-fish aquarium simulation from Cracker Software. The 24,000 yen (\$200) program lets users control the environment of the aquarium, including food, medicine, light and heat. Each fish in the simulation is an individual and exhibits a complete range of fish behavior, including breeding and dying.

A U.S. version is planned for late 1993. □

More shortcuts added to ZIP-code database

By Ian G. Jacobs

Huntington Beach, Calif. — Software Publishers Inc. has released an update that simplifies use of its mail-management software.

The \$689 AccuZip6 1.6 CD-ROM includes a ZIP-code database based on ACI US Inc.'s 4th Dimension where users can look up ZIP+4 codes and carrier routes by street address. The program's mail sorts can bring the per-piece price of a standard letter down to less than 11 cents, the company said.

Version 1.6 adds:

► **Look-up of city/state data.** Users now can enter part of a ZIP code, a city name or a state, and AccuZip6 will list all matching cities, states and ZIP codes in the United States.

► **Run-on matching.** The program can match addresses that contain numerous mistakes. For example, if "207 GnaadeBileidhgrdl", AppleGate CA 950" is entered, AccuZip6 can match it with "207 Granada Drive, Aptos, Calif. 95003-5007," the company said.

► **Data-entry shortcuts.** In many data-entry fields, users can

In Focus shows projection panel small enough to fit in a briefcase

By Nathalie Welch

Tualatin, Ore. — In Focus Systems Inc. last week unveiled an active-matrix LCD projection panel small enough to fit into a briefcase.

The \$5,995 PanelBook, measuring 9.5 by 2 by 11.5 inches, is 40 percent smaller than typical full-size panels, the company said. The device is due next month.

PanelBook's 9.4-inch diagonal screen can project an image area comparable to that projected by full-size 10-inch panels, In Focus said.

The LCD panel sports a TFT (thin-film transistor) screen with a

resolution of 640 by 480 pixels. It can display more than 1.4 million colors simultaneously with a contrast ratio of 100-to-1.

A built-in Universal Traveler feature projects full-motion video from domestic and international video signals, including NTSC, PAL (European) and SECAM (French).

The panel comes with a remote-control device and a Universal Power Adapter.

In Focus Systems Inc. is at 7770 S.W. Mohawk St., Tualatin, Ore. 97062. Phone (503) 692-4968; fax (503) 692-4476. □

SyQuest prepping 1.8-inch removable hard disks

Fremont, Calif. — SyQuest Technology Inc. is gearing up to bring 3.5- and 2.5-inch versions of its removable-cartridge hard disk technology to the Mac, but the company is already looking ahead to a 1.8-inch version.

SyQuest announced last week that it is developing such drives, with capacities up to 100 Mbytes, for use on PCMCIA cards in notebooks, pen-based computers and personal digital assistants. The

company declined to specify target prices or a release date.

Leading hard drive manufacturers have already announced 1.8-inch drives for use on PCMCIA cards, which users can easily pull out and replace with another card containing a second drive. But SyQuest said its approach, by allowing users to swap out the data cartridge but leave the drive mechanism in place, would offer much more affordable expansion of storage capacity. □

Japan's techno-brave new world

Visitors to Japan often find Tokyo's "Electric Town" Akihabara district to be the model for Ridley Scott's depiction of the future in the movie "Blade Runner."

The shelves of large and small stores are tightly packed with an incredible variety of consumer electronics. Most of these permutations of familiar products never make it to the United States or are introduced years later after clearing legal, regulatory and marketing roadblocks.

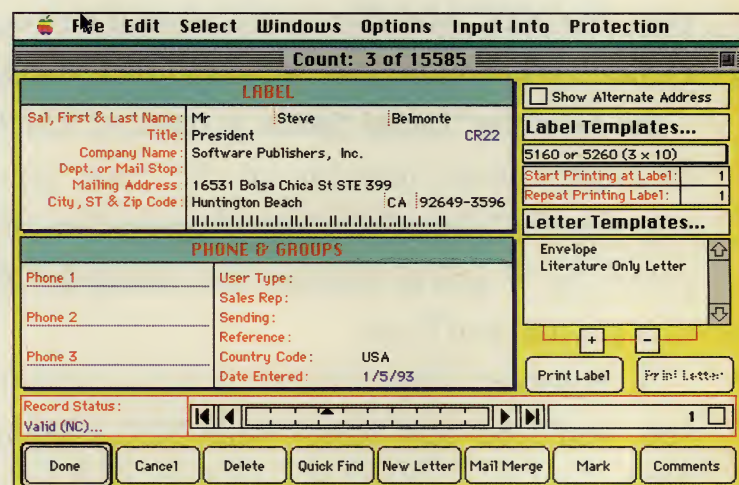
Portions of this techno-brave new world could be found on the floor of Macworld Tokyo this month. Although no U.S. debuts are planned for these products, they may portend some future technology directions.

► **Sharp System Products Inc.** of Chiba displayed D-Porter, a HyperCard-based front end from Parway Corp. of Fukuoka for the

Sharp PA-V1 palmtop. Like Apple's Newton personal digital assistant (PDA), the PA-V1 can communicate with other computers equipped with a wireless modem, or directly with a cable.

► **Sony Corp.** of Tokyo introduced Quick Viewer Mac for its PTC-310, a pen-based PDA that supports kanji character recognition and uses a small docking station with a built-in printer to connect to other computers and devices.

Handheld devices similar to the Sony Data Discman are the rage in Japan. Titles sold on 8-centimeter "mini" CDs include dictionaries, travel references, baseball fact books, the King James Bible and cookbooks. Both Sharp and Sony showed palmtop and Mac connections to the dedicated handheld devices that play these titles. — *By David Morgenstern*



AccuZip6 CD-ROM helps users lower the cost of mailings. A new labels template, to the right of the entry screen, can be customized by the company to meet users' needs.

enter keystroke shortcuts, and the program automatically will guess the correct word. For example, entering "Pr" can generate "President."

► **Label templates.** Labels now can be exported to any word processor, although Metropolis Software Inc.'s DB/Write remains integrated into AccuZip6. The company said it will design custom fixed label templates for free.

The database is updated quarterly; updates are \$200 per year. By September, the updates will be monthly, the company said.

Upgrades to Version 1.6 are free. Software Publishers Inc. is at 16531 Bolsa Chica St., Suite 306, Huntington Beach, Calif. 92649-3595. Phone (714) 846-1908 or (800) 233-0555; fax (714) 840-0464. □

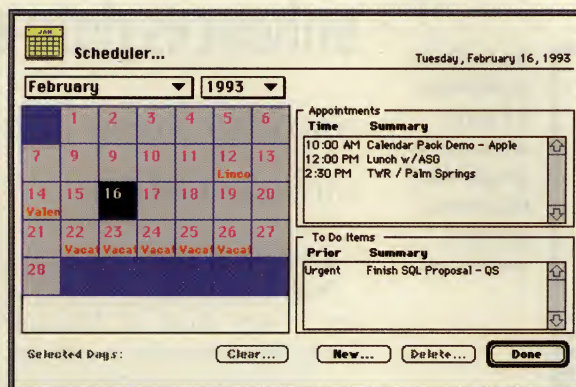
Add-on helps 4D developers do calendaring

Calendar Pack offers choice of colors, fonts

By Robert Hess

Huntington Beach, Calif. — 4th Dimension users looking for a date now can find one with the release this month of Automated Solutions Group's Calendar Pack External Kit.

Database developers working in ACI US Inc.'s 4D environment can use Calendar Pack to add calendar areas to their 4D database layouts. Programmers can control the appearance of calendar items, for example, specifying entries' colors and fonts. Data entered into calendar areas can be stored in 4D picture fields for fast retrieval of entire months.



Automated Solutions Group's Calendar Pack externals let developers add colorful datebooks to 4th Dimension databases.

"I'm using it in an accounting database to enter dates and perform searches," said Michael Morehead, president of Business Network Inc., a database developer in Oklahoma City. "You don't have to write a lot of code to make it work."

Calendar Pack sells for \$79.95 plus \$5 shipping and handling.

Automated Solutions Group is at 16742 Gothard St., Suite 114, Huntington Beach, Calif. 92647. Phone (714) 375-4252; fax (714) 375-4257. □

EHelp brings documentation system to HyperCard

By Raines Cohen

Cary, N.C. — Foundation Solutions Inc. this month released EHelp for HyperCard, a new version of its multimedia on-line documentation system that works with HyperCard stacks.

EHelp documents can contain text, graphics, audio and QuickTime movies. The program supports balloon-style help under System 6 as well as System 7. Users can search the help text by keyword or expression and browse by selecting topics or fol-

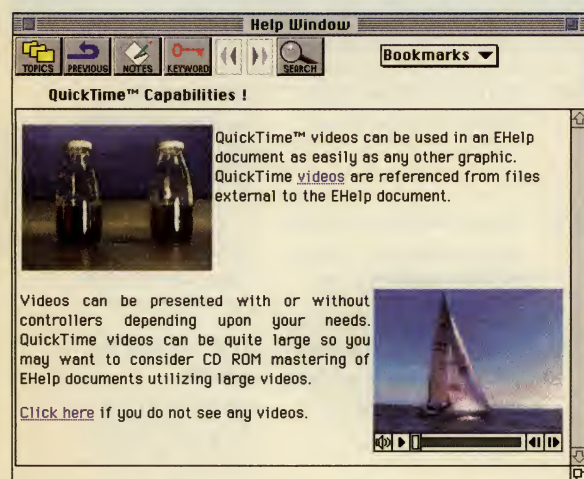
lowing hypertext links. Users can add bookmarks and notes to existing help text. Help text can be printed.

The new externals will allow stack developers to rapidly incorporate existing EHelp documents into their stacks as well as provide on-line documentation for new stacks.

EHelp already is available for Symantec Corp.'s THINK C and Pascal and Apple's Macintosh Programmer's Workshop C and C++. A Windows version is compatible with Aztec C.

EHelp for HyperCard sells for \$995 per stack. EHelp Tester, a companion application for debugging help systems, sells for \$695. Non-commercial (in-house) users pay the same price for a five-stack license.

Foundation Solutions Inc. is at 2000 Regency Parkway, Suite 345, Cary, N.C. 27511. Phone (919) 481-3517; fax (919) 481-3551. □



EHelp documents, now accessible from HyperCard stacks, can contain QuickTime movies and other multimedia items.

Formatter 1 expands range to support opticals

Bothell, Wash. — Software Architects Inc. last week delivered an updated version of Formatter1, its low-cost universal disk-formatting and partitioning utility.

Version 2.0 keeps the original release's \$49.95 price tag but adds support for all major 5.25- and 3.5-inch optical devices, including mechanisms from Sony Corp., Hewlett-Packard Co., IBM Corp., Panasonic Communications & Systems Co., MaxOptix Corp. and Ricoh Corp.

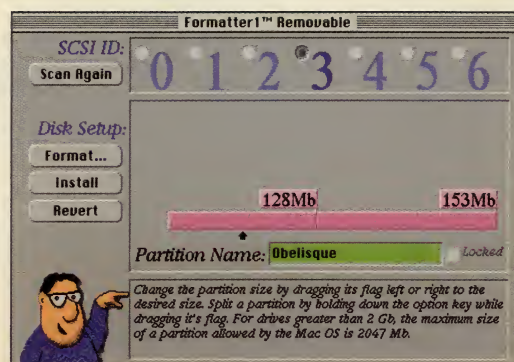
Designed for nontechnical users, Formatter1 features an on-line manual and a cartoon-style on-screen Helper that offers context-sensitive cues. The package includes bootable

System 6 and System 7 floppies, an extension that mounts removable-media cartridges automatically, and a library of drivers optimized for specific drive brands and models.

Formatter1 presents a colorful interface to help novice users format and partition hard drives or, with Version 2.0, optical storage media.

Upgrades are \$19.95.

Software Architects Inc. is at 19102 North Creek Parkway, Suite 101, Bothell, Wash. 98011. Phone (206) 487-0122; fax (206) 487-0467. □



News

BRIEFS

Microsoft Office offered on CD-ROM

Redmond, Wash. — The latest version of Microsoft Office for the Macintosh, featuring the most recent releases of Microsoft Corp.'s Mac applications, is available now on CD-ROM.

Microsoft Office 3.0 includes Microsoft Word 5.1, Microsoft Excel 4.0, Microsoft PowerPoint 3.0 and Microsoft Mail 3.1 client software for \$750. The combined retail price of the applications when purchased separately is \$1,500.

Microsoft Office 3.0 was released on floppy disk in November.

Office users can upgrade any individual product when a new version ships on floppy disk. However, no upgrade is available for the entire collection on CD-ROM.

Microsoft Corp. is at 1 Microsoft Way, Redmond, Wash. 98052-6399. Phone (206) 882-8080; fax (206) 936-7329.

Mass Microsystems reshapes drive enclosures

Sunnyvale, Calif. — Mass Microsystems Inc. this month unveiled new external-drive enclosures that gradually will replace the company's zero-footprint models.

The new MASSPak enclosures, which include a 50-pin dual SCSI connector, a universal power supply, a fan and an external SCSI ID switch, can stand either horizontally or vertically. Users can stack up to seven MASSPak units on top of each other.

The price of drives in the MASSPak enclosure will be the same as the equivalent drive in a zero-footprint case. The MASster Drives, in capacities from 510 Mbytes to 1 Gbyte, and the 128-Mbyte DataPak MO/128 are available now in the MASSPak configuration.

The MassDAT digital audio tape drive and the Diamond Drives, in capacities from 120 Mbytes to 1 Gbyte, will be available in MASSPak enclosures next month, the company said.

Mass Microsystems Inc. is at 810 W. Maude Ave., Sunnyvale, Calif. 94086. Phone (408) 522-1200; fax (408) 733-5499.

Procom to throw 2.9 Gbytes at Quadra 900, 950

Irvine, Calif. — Procom Technology Inc. this week will ship two 2.9-Gbyte Fast SCSI-2 drives, an external model and an internal drive for the Quadra 900 and 950.

Both the external MTD 2900, which lists for \$8,795, and the internal QD 2900, priced at \$8,495, are based on a 5.25-inch Seagate Elite-3 mechanism.

The drives offer average access times of 11.5 milliseconds. They have sustained data transfer rates of 6.5 Mbytes per second and maximum burst transfer rates of 10 Mbytes per second when used with Procom's \$995 Nu32 SCSI Enabler BusMaster card.

Procom Technology is at 2181 Dupont Drive, Irvine, Calif. 92715. Phone (714) 852-1000 or (800) 800-8600; fax (714) 852-1221.

JobTracker reaches past publishing

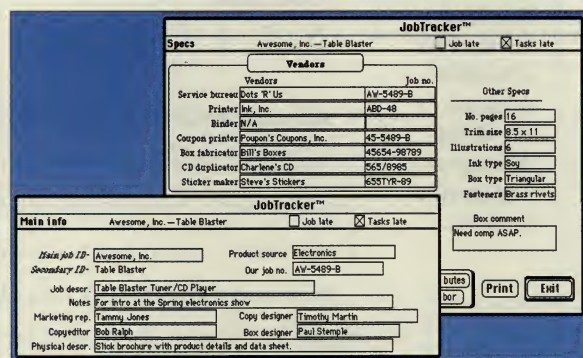
Project manager improves tracking

By Lisa Picarille

Julian, Pa. — InfoSolutions Inc. is expanding the focus of its JobTracker project manager beyond periodical and book publishers to other types of professional and business publishers.

JobTracker 2.5, based on ACI US Inc.'s 4th Dimension 3.0 relational-database engine, will let users track multiple projects simultaneously and customize the labels used in managing projects.

Due this month, the new version also will provide facilities to track other project elements, such as labor and costs, and will let users generate daily and weekly to-do lists that can



be broken down by department. In the current version, only monthly to-do lists can be created.

In addition, users will be able to generate charts tracking the entire history of projects, as well as charts comparing the originally scheduled completion dates with the actual dates of completing project segments.

A single-user version, which

includes a runtime version of 4D 3.0, is \$695 plus \$149 for the first year of support and updates. Users covered under the annual support plan receive free upgrades; other users must pay the full price to upgrade.

Multi-user, network versions — which include 4D Server — are available in concurrent license packs. Pricing ranges from a three-user license for \$3,090 to a 50-user license for \$26,145.

InfoSolutions Inc. is at 147A Silverdale Road, Julian, Pa. 16844. Phone (814) 355-2983; fax (814) 355-7070. □

The field label in JobTracker 2.5 can be customized for nonpublishing tasks such as art shop management.

Spreadware add-on for Excel enhances data-analysis routines

Statistics Menu 2.0 includes tool bar

By Lisa Picarille

Palm Desert, Calif. — Trying to stay a step ahead of Microsoft Corp., Spreadware last month updated Spreadware Statistics Menu, a package that adds sophisticated statistical functions to Microsoft Excel. Microsoft had incorporated all of Version 1.0's statistical functions into Excel 4.0, released for the Macintosh last June.

Statistics Menu Version 2.0 is still priced at \$229 but will be available for \$129 through the end of March.

It adds data-analysis routines, including multiple regression, which lets users generate a list of indexes showing the relationships between predicted variables. Performing this type of analysis previously required Excel users to export data into a stand-alone statistics package.

Other additions include proba-

bility functions, correlation matrices, t-tests, and a number of descriptive and nondescriptive statistics functions.

The program adds a data-entry tool bar with buttons that transpose data, store selected ranges and simplify range selection.

Version 2.0 adds a new Utility menu with functions for manipulating and formatting data in preparation for statistical analysis. Users can add missing values, export data to another file and copy data between worksheets.

Spreadware Statistics Menu 2.0 also lets users execute Excel's own statistical routines without programming in Excel's macro language.

Upgrades are \$29. Users of Spreadware Statistics Menu for Informix Corp.'s Wingz and Claris Corp.'s Resolve also can upgrade for \$29.

Spreadware is at P.O. Box 4552, Palm Desert, Calif. 92261-4552. Phone (619) 347-2365; fax (619) 347-6045. □

Sounds of English uses animation, digitizers to teach pronunciation

By Ian G. Jacobs

Irvine, Calif. — Companies employing large numbers of immigrants often have to provide extra assistance to help them learn English well enough to do their jobs.

Irvine Interactive Inc. here recently shipped a program that combines a gamelike interface with digitizing capabilities to teach users English pronunciation, the company said.

Sounds of English, based on HyperCard, displays an animation of the lip and tongue movements necessary to say a word. Students then can record their own attempt at the word and compare it with the standard pronunciation.

Programs released last year by HyperGlott Software Co. of Knoxville, Tenn., use similar methods to teach Spanish, French and Italian but lack animation features (see MacWEEK, July 27, 1992).

The software comes in two modules, Vowels and Consonants, each priced at \$45.

The programs work with the built-in microphones on Macs and external digitizers such as Macromedia Inc.'s MacRecorder hardware.

Sounds of English is available from Chariot Software Group at 3659 India St., Suite 100, San Diego, Calif. 92103. Phone (619) 298-0202 or (800) 242-7468; fax (619) 491-0021. □

CharisMac ships WORM utility

By Henry Norr

Newcastle, Calif. — CharisMac Engineering Inc. last month released a software package that for the first time lets Mac users take advantage of the WORM capabilities of multifunction optical drives.

WORM Time Stamp Manager, priced at \$199, supports WORM (write-once-read-many) as well as erasable cartridges in leading multifunction drives, including Sony E511, MaxOptix Tahiti IIM and Panasonic 7010 and 7011 mechanisms. Previously, according to CharisMac, Mac users could operate such drives only with erasable media because WORM drivers were not available.

The software mounts the optical

cartridges as standard desktop volumes. By clicking on a time-stamp icon in a control panel, users can "travel in time" to a previous state of the disk.

The package includes CharisMac's \$129.95 Anubis universal formatting and utility package. The WORM software also is now included in the company's Anubis Jukebox Utility, allowing users to mix and match WORM and rewriteable disks in a single loader (see MacWEEK, July 27, 1992).

CharisMac Engineering Inc. is at 1245 Boot Hill Lane, Newcastle, Calif. 95658. Phone (916) 885-4420 or (800) 487-4420; fax (916) 885-1410. □

PowerBook carrying cases: Some recent offerings

MANUFACTURER	CASES	PRICE RANGE	UNIQUE FEATURES	CONTACT
Kensington Microware Ltd.	NoteBook Traveler Compact, Deluxe, Executive	\$129.95-\$199.95	Disk pockets, business-card holders, internal plastic frame	2855 Campus Drive San Mateo, Calif. 94403 Phone (415) 572-2700 Fax (415) 572-9675
Crosby Creations	PowerBook 100, PowerBook 140/170 (with or without battery pack), StyleWriter/PowerBook combo	\$35.95-\$69.95	Company will customize orders to any configuration; soft cases with bottom padding so case stands upright	E. 124 Sinto Ave. Spokane, Wash. 99202 Phone (509) 325-3276 Fax (509) 326-5712
Magenta Seven Inc.	Magentacase Duo, MagentacaseLite Duo	\$39.95-\$119.95	Lite is designed for Duos that are tucked into briefcases or luggage; contains compartments for extra batteries	5109 Holly Ridge Drive Suite 209 Raleigh, N.C. 27612 Phone (919) 787-2787 Fax (919) 787-1277
MicroStore	PowerCourier	\$54	Inner compartment can be configured by rearranging Velcro-tabbed walls	P.O. Box 33 Le Sueur, Minn. 56058 Phone (612) 665-6717 Fax (612) 665-2604
The Madson Line	PowerBook Sac, PowerBook Briefcase	\$59-\$249	Available in leather and two types of nylon; rubber bottom keeps case standing upright	P.O. Box 338 Corte Madera, Calif. 94976 Phone (415) 927-3600 Fax (415) 927-4661
Doublecase Corp.	Notebook 1000, 3000, 3400, 3600, 4000, 4400, 4600	\$59.95-\$179.95	Hard case exterior, foam sections are removable for personal configuration; higher-priced models include file folders	5350 N. Academy Road Colorado Springs, Colo. 80918 Phone (719) 531-5535 Fax (719) 594-9331
I/O Design Inc.	Notebook SL/EX	\$99.95-\$129.95	Extended model includes power-supply holder, disk slots, a security zipper with personal key	P.O. Box 156 Exton, Pa. 19341 Phone (215) 524-7277 or (800) 241-2122 Fax (215) 524-7946
Utilitron Inc.	PowerBakPak	\$119.95	Converts from a briefcase to a backpack	P.O. Box 811 Allen, Texas 75002 Phone and fax (214) 727-2329 or (800) 428-8766

Library apps to include map browser

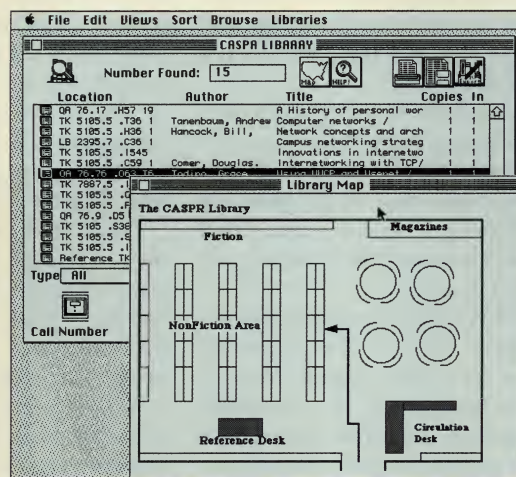
By Kirsten L. Parkinson

Cupertino, Calif. — Caspr Inc. next month will ship an application that lets Mac users read library-catalog records in a standard format on the Mac. It also will ship an update to a separate program designed for catalog browsing in publicly accessible libraries.

The company last month also unveiled a new CD-ROM database. ▶ **MarcReader** lets users read bibliographic files in MARC (Machine-Readable Cataloging) format from the Mac desktop and copy them into their own library database.

Beginning next month, MarcReader will be included with Caspr's LibraryWorks, a Mac-based library database system that starts at \$1,295. It also will be available separately for \$69.95.

▶ **LibraryBrowser 1.2**, the new version of the company's public-access catalog program, will add a map feature that allows users to create library maps in Mac graphics applications and import them into LibraryBrowser in any standard graphics format.



Caspr's Library-Browser 1.2 can import library maps created in Mac graphics applications and show users where particular books are located. The program requires Library-Works, the company's library database system.

After searching for a particular item, library patrons will be able to click on a map icon to see where in the library the item is located.

LibraryBrowser 1.2 will sell next month for \$195 for a single user, \$1,995 for a site license and \$15,000 for a companywide license.

LibraryBrowser must be used in conjunction with LibraryWorks. The LibraryBrowser upgrade is free to users who have paid their annual LibraryWorks maintenance fee.

▶ **National Newspaper Abstracts**, due in the second quarter, will offer abstracts of articles from The New York Times, The Washington Post and The Wall Street Journal on CD-ROM.

One year's subscription will be \$1,295, including quarterly updates.

Caspr Inc. is at 2011 Stevens Creek Blvd., Suite 270, Cupertino, Calif. 95014. Phone (408) 446-3075 or (800) 852-2777; fax (408) 446-1574. □

Sierra helps developers move from Pascal to C with p2c update

By Matthew Rothenberg

Incline Village, Nev. — Sierra Software Innovations Inc. last month shipped an update to p2c, a code translator that is helping Mac developers make the exodus from Pascal to C.

Like the original version, p2c 2.0 is a complete Pascal compiler that automatically converts Object Pascal code to C++, translating structures such as nested procedures, failure handlers and headers. However, the new version also can generate straight ANSI C code from MPW Pascal for developers not using object-oriented programming (OOP).

Version 2.0 also features a user-definable redefinition table, which p2c uses to convert aspects of the Mac Toolbox that are defined differently in Pascal and C.

The company said p2c 2.0 can convert a 150,000-line application in about two days.

According to Sierra, companies such as Claris Corp., ACI US Inc., Macromedia Inc., GeoQuery Corp. and Graphsoft Inc. use p2c to translate their applications from Object Pascal or Pascal to C++, a trend that reflects Apple's growing emphasis on C++ as its OOP language of choice. Version 3.0 of MacApp, Apple's object-oriented application environ-

ment, was rewritten in C++ instead of Object Pascal, its earlier standard. Furthermore, Apple and Symantec Corp. have announced that the new Bedrock development environment and compilers for the PowerPC architecture will not include links to Object Pascal.

Michael Demeyer, president of GeoQuery of Naperville, Ill., said his company plans to use p2c 2.0 to convert its GeoQuery application from Object Pascal to C++ as part of its next upgrade. "We obviously have a big investment after years of working with Pascal, but looking to the future, Pascal is not the language of choice," Demeyer said. "We had to find a way to convert if we wanted to go forward, and [p2c] is orders of magnitude easier than if we wanted to do it by hand."

"To my knowledge, [p2c] is the first industrial-strength product out there that actually understands what the object-programming model is about," he said.

p2c 2.0 is \$9,500 for a single-user version; site licenses are available, and current owners can upgrade free.

Sierra Software Innovations Inc. is at 923 Tahoe Blvd., Suite 102, Incline Village, Nev. 89451. Phone (702) 832-0300 or (800) 621-0631; fax (702) 832-7753. □

Prolog upgrade adds QuickTime

By April Streeter

Mountain View, Calif. — Advanced A.I. Systems Inc. this month shipped an upgrade to its object-oriented programming package with additional source code and support for QuickTime movies.

Full Control Prolog is a \$598 expert-system-development environment with an object-oriented kernel.

The upgrade consists of source-code additions to bring the total lines of code delivered with the program to 13,500. According to the company, the added code includes examples of how to design end-user program interfaces and how to use Apple events in a program. More than 1,400 Mac Toolbox trap definitions also are included.

New objects included with Version 3.1 let users add controls that play QuickTime movies and record and play sounds to their programs. Programs created with the new version also can support balloon help and pop-up menus.

The upgrade is \$65 for Version 3.0 or higher, free to users who purchased it this year, and \$199 for users of earlier versions (\$299 starting this June).

Advanced A.I. Systems Inc. is at P.O. Box 39-0360, Mountain View, Calif. 94039. Phone (415) 948-8658; fax (415) 948-2468. □



FROM THE Bookshelf

This week we showcase selected texts that help users understand, fix, upgrade and even build their own Macs.

Build Your Own Macintosh and Save a Bundle, Second Edition

By Bob Brant

The new edition of this guide to assembling Macs from mail-order components now includes information on LC, IIsi and Quadra logic boards. It also provides directions on how to build upgrades and a list of vendors for all components.

\$29.95 / 480 pages / ISBN 0-8306-3973-X

Windcrest Books / Monterey Lane / Blue Ridge Summit, Pa. 17294-0850
Phone (717) 794-5461 or (800) 233-1128 / Fax (717) 794-2103

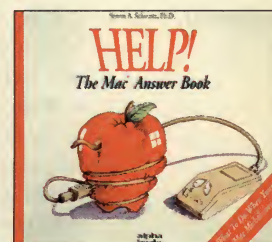
Help! The Mac Answer Book

By Steven A. Schwartz, Ph.D.

Offering a lighthearted approach to Mac problem solving, this book provides numerous illustrations that help users and novice administrators determine what's wrong with their systems. Special diagnostic tables direct readers to the proper section to solve their specific problem.

\$14.95 / 200 pages / ISBN 1-56761-033-1

Alpha Books (an imprint of Prentice-Hall) / 11711 N. College Ave. / Carmel, Ind. 46032
Phone (317) 573-2500 or (800) 428-5331 / Fax (317) 573-2583



Troubleshooting Your Macintosh

By Douglas High

This instruction manual provides guidance for do-it-yourself maintenance, upgrades and troubleshooting. It covers most Mac models and includes an extended reference section. A separate section covers printer problems and solutions.

\$29.95 / 480 pages / ISBN 1-55851-189-X

M&T Books / 411 Borel Ave., Suite 100 / San Mateo, Calif. 94402
Phone (415) 571-1277 or (800) 688-3987 / Fax (415) 358-8728



The Macintosh Do-It-Yourself Upgrade Book

By Garry Howard

This detailed manual explains the process of upgrading most models. It explains the warranty ramifications of cracking your Macintosh's case and gives recommendations on which upgrades are worthwhile.

\$26.95 / 450 pages / ISBN 0-7821-1123-8

Sybex Inc. / 2021 Challenger Drive / Alameda, Calif. 94501
Phone (510) 523-8233 / Fax (510) 523-2373

Management

Managers balance strategies to combat Mac obsolescence

Facing a fast-moving market, managers must make difficult choices to keep their systems current.

By Jeff Ubois

With processor speeds doubling every year and a half, planning for obsolescence is a critical but difficult task for most Mac managers.

Rapid change presents managers with a dilemma. New products are introduced at premium prices and then depreciate quickly, so managers who buy the latest products with the longest useful life will probably see the same items advertised at half the price a few months later. But choosing slightly older, less expensive systems whose prices have stabilized also can seem foolish a few months later when yet another generation of products is introduced.

Mac managers responsible for buying decisions are evolving various tactics and strategies to cope with the problem.

Tactically, they follow the latest trends, prices and product announcements and constantly increase the minimum acceptable configurations for new machines.

Strategically, they evaluate purchases with sophisticated financial models, extend hardware life with periodic upgrades, obtain nondisclosure agreements from vendors to help plan ahead, and find creative ways to reuse or sell old equipment.

"If you're responsible for buying, you fear knowing that in one year's time something else will come out that will make you look like an idiot," said Paul Hurley, director of MIS for the Sacramento, Calif.-based law firm McDonough, Holland & Allen. "Sometimes you just have to hope the people you work for are troglodytes who don't keep up on this stuff."

The minimum configuration.

The short form, gathered from managers around the country, is this: 68030 machines running at 25 MHz or better in an 8/80 is, or should be, the new minimum configuration for most corporate buyers. Modems should operate at 14.4 Kbps or better. Printers should be capable of handling direct Ethernet connections. In most new installations, 10BASE T cabling is the norm, and in larger sites, LocalTalk is on the way out, being replaced by Novell and Ethernet.

Managers often look at the problem in terms of what not to buy.

"I wouldn't buy any LCs, and I have not been recommending the Performa," Hurley said. "It's amazing Apple is still shipping the 4/40 — the minimum should be 8 Mbytes of RAM."

A major reason for that, Hurley said, is System 7.1 and TrueType fonts. "With 4 megs of RAM you might get one application running before you run out of space if you have the fonts loaded," he said.

Others echo Hurley's sentiments. "You shouldn't buy any more IIsi machines with Apple dumping them," said Ed So, staff engineer at Lockheed Missiles & Space Co. Inc. of Sunnyvale, Calif. "Don't buy anything with less than 8 megs of RAM — I don't care what Apple says. And never buy the 12-inch monitors, that is bad luck — you really don't get what you pay for."

Erik Nelson, senior manager of MIS at Idec Pharmaceuticals Corp. of La Jolla, Calif., agreed on the 8/80 minimum and said, "We aren't buying anything less than a IIfx with a 13-inch color or 12-inch black-and-white monitor right now, and we are starting to standardize on 16-inch monitors."

For peripherals, Nelson said, "I wouldn't buy any LaserWriter you couldn't put on Ethernet or one that couldn't switch automatically between PCL and PostScript." And he added, "I wouldn't buy anything less than a 14.4-Kbps modem."

Growing storage needs.

Ballooning storage requirements are caused partly by the increasing size of applications. "The bare-bones minimum hard drive for anyone here is 80 Mbytes, and I love to get 230-Mbyte drives," Hurley said. "I installed [Microsoft] Excel the other day and it took up 8 Mbytes just by itself, and Word takes up about the same. And if you want QuickTime, you better have at least 230 Mbytes with a 90-Mbyte removable."

With bigger disks, bigger backup systems also are needed, Hurley said. "Anything less than a gigabyte is passé."

Network, OS considerations.

Networks and operating systems require special attention. Once selected, they can't be easily replaced or upgraded and, therefore, they tend to last a long time.

Managers are divided about LocalTalk. Some argued that it is obsolete and should be replaced with Ethernet, and others said it still has a few good years left. "LocalTalk is just too slow," Nelson said. "It takes 70 seconds to launch Microsoft Word 5.x over LocalTalk on an SE."

Hurley said: "I'm a proponent of LocalTalk. It works fine as long as you don't overload the segment or zone. Ethernet has a great deal of advantages but also a lot of headaches — it is not plug and play, and it's not straightforward."

AppleShare is taking some hard knocks from Novell Inc.

"AppleShare is obsolete for anything more than small, Mac-only workgroups," Nelson said. "And Novell is not as difficult as everyone makes it out to be."

Bill Wakefield, president of AAlid Support Corp., a San Francisco-based consultancy, agreed. "Novell is five to 10 times faster than the beefiest AppleShare servers — Quadra 950s with accelerators can't compare to a 486 with Novell on it," he said. But if Novell discontinues sales of NetWare 3.11, Wakefield said, "that will force AOCE (Apple Open Collaboration Environment) across the board."

"OCE will obsolete everything below 7.1," Wakefield said. "You will have to go with OCE to run the new Novell NetWare 4.0 and be able to even see the directories." (See MacWEEK, Jan. 18.)

For cabling, managers are shying away from thin and thick Ethernet and going with high-quality 10BASE T. "I don't think anyone should run less than category five-grade wiring, just so there is no question they can run 100 Mbps on it later," said Nelson, who is using 10BASE T and Fiber Distributed Data Interface in his new network. He said he continues to use LocalTalk only as an emergency redundant network connection for his Macs.

Strategy. Tactics shift from day to day as new products are introduced and old ones retired. But strategies for coping with obsolescence remain consistent because the issues — financial analysis, prepurchase choices, post-purchase maintenance and so on — are perennial.

For the most part, managers said, their financial analyses are determined by company rules. Lockheed, for example, treats items costing more than \$1,500 as fixed assets, while items less than that are considered expenses. The fixed assets are depreciated over time. In effect, the system asks managers to make monthly payments on computers in their departments.

While the system defers the costs of new equipment, sometimes it leaves managers paying for old technology. "When we look at technology, we hope it will last five years, but sometimes two years is pushing it," Lockheed's So said.

Another key to good prepurchase decisions is cultivating vendor relationships. "Getting a good nondisclosure agreement really means something," Hurley said. "If it hadn't been for the NDA when we were setting up four years ago, we would have been happily ignorant in purchasing SEs and IIfx machines instead of the SE/30s and IIfx machines we actually bought — that NDA really paid off for us, and we are still satisfied with these machines."

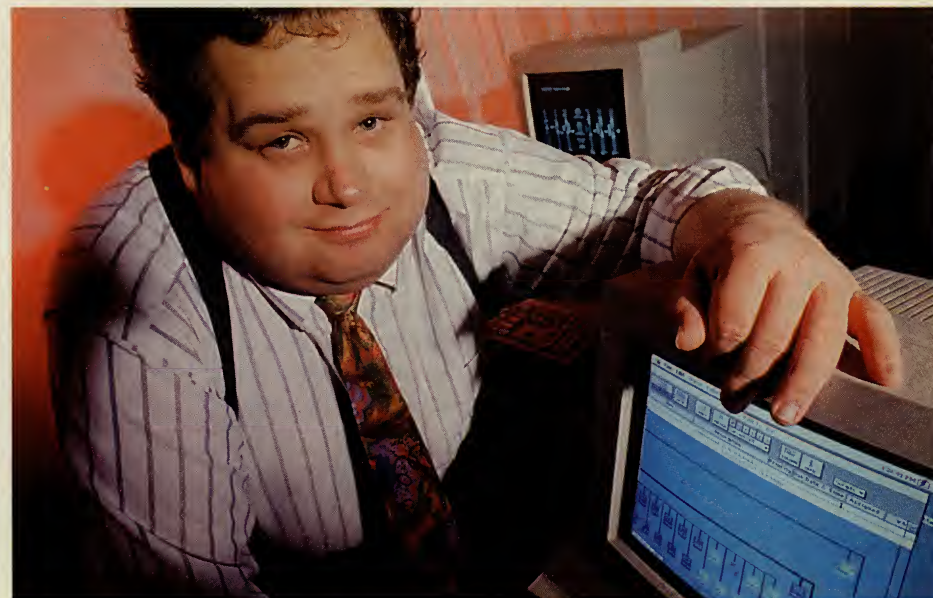
The role of upgrades. When to upgrade is another strategic issue, and managers are divided as to what makes sense.

The move to System 7 is a case in point. "We have 7,000 Macs here, and if you multiply that by \$100 to \$200 or whatever it costs you to upgrade to System 7, you are talking about big bucks," said

See Obsolescence, next page

"If you're responsible for buying, you fear knowing that in one year's time something else will come out that will make you look like an idiot."

— Paul Hurley



Paul Hurley, director of MIS for a Sacramento, Calif., law firm, said that getting nondisclosure information on forthcoming products "really paid off" in helping him make CPU purchasing decisions.

Obsolescence

From previous page

So, who recently helped complete the job.

Hurley uses upgrades to extend the life of equipment. "Two years ago we upgraded our SE/30s and IICx machines to 8 Mbytes, and that extended their life. The next upgrade will be for the drives, which we'll take up to at least 85 megs or more," he said.

Nelson takes a different approach to upgrading disks, preferring to add storage at

the server. "Adding storage at the server is more cost-effective, and it's easier to back up," he said. "And since we are using duplex SCSI drives, a drive can fail and users never have to know about it."

Accelerator cards seem to be more popular as one-time or occasional purchases rather than as means to upgrade entire sets of machines. "There are always problems with accelerators," Nelson said. "We just got through a nightmare, but they seem to be getting better."

But, Wakefield said, "By the time you add the extra RAM and a big monitor, it costs you \$1,500 to upgrade a machine with an accelerator card, and I can't see any point — you're still stuck with the old monitors, RAM and other things that are going to die."

Finally, there comes a time when old equipment needs to go out the door. And that happens in various ways. "We just had a mushroom cloud over one of our last Mac Plus machines," Nelson said. At other times, equip-

ment simply is passed on to less demanding users in what Nelson calls Trickle-down Mac-economics or sold at a discount to employees.

At Lockheed, equipment tends to migrate downward. "As time goes by, the Macs from one category of users can be turned over as surplus to the next-lower category," So said. "An engineer might have a IICx and all of a sudden he needs to do visualization, so he needs a Quadra 950, and the cx is useless to him, so it gets passed on." □

Calendar of Events

MARCH

Feb. 29-March 2: QuickTime & Multimedia Conference, San Francisco. This conference focuses on all multimedia technologies available for the desktop. Contact Sumeria Inc. at (415) 904-0800; fax (415) 904-0813.

March 3-4: Mactivity/CEO, Waikoloa, Hawaii. Conference to provide executives from Mac connectivity vendors with information to enhance profitability in the '90s. Contact Winehouse Computer Co. at (408) 354-2500; fax (408) 354-2571.

3-6: SPA 1993 Spring Symposium, San Diego. Software exposition and conference. Contact Software Publishers Association at (202) 452-1600; fax (202) 785-3649.

8-12: Interop/Spring, Washington, D.C. Conference and exposition on network computing. Contact Ziff-Davis Co. at (415) 941-3399; fax (415) 949-1779.

9-12: Computers, Freedom and Privacy, Burlingame, Calif. Conference addressing the impact of computer and telecommunications technologies on freedom and privacy in society. Contact the Association for Computing Machinery at (510) 845-1350; fax (510) 845-3946.

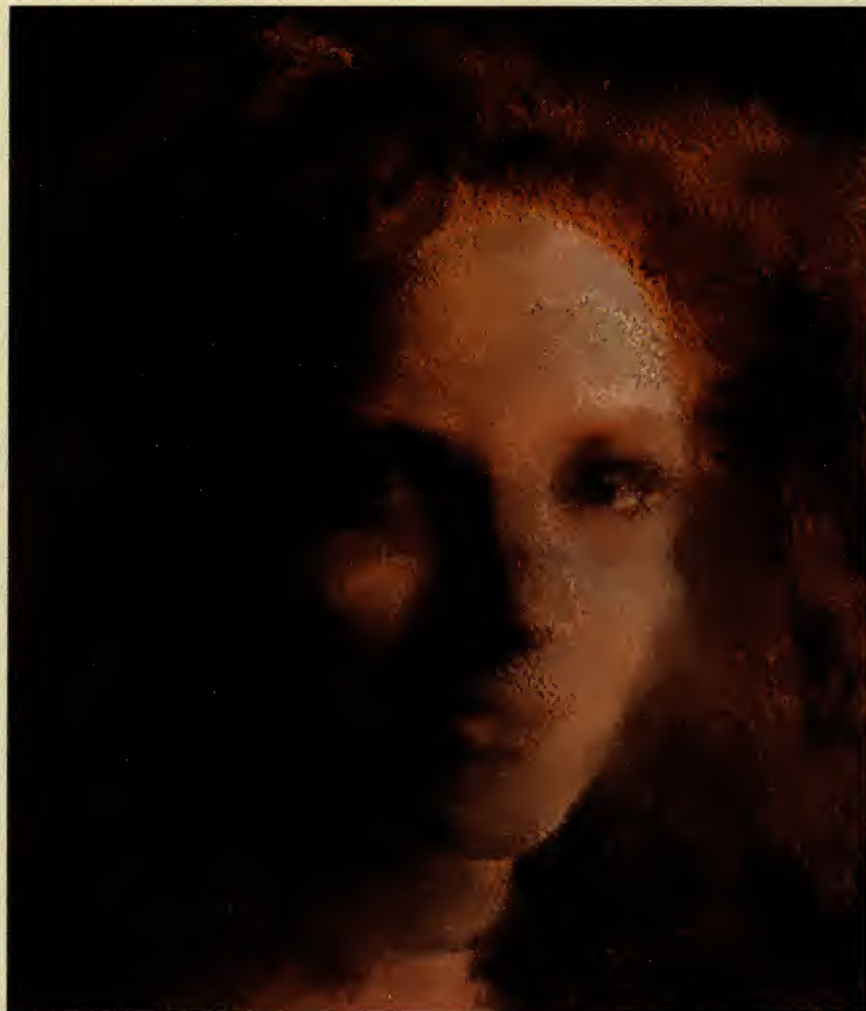
15-16: Lap & Palmtop, New York. Portable computing and communications conference and exposition. Contact Laptop Expositions at (212) 682-7968; fax (212) 867-8277.

16-19: Image World, Washington, D.C. Covers video, animation, graphics and multimedia. Contact Knowledge Industry Publications Inc. at (914) 328-9157 or (800) 248-5474; fax (914) 328-9093.

22-23: PageMaker Conference/Expo, Boston. Conference focuses on Aldus PageMaker; expo is on desktop publishing in general. Contact PageMaker Conference at (206) 633-3431; fax (206) 633-0153.

24-31: CeBIT '93, Hannover, Germany. Huge multiplatform computer trade show. Contact Hannover Fairs USA at (609) 987-1202; fax (609) 987-0092.

Please submit notices of conferences, trade shows and other Mac-related events to Calendar, MacWEEK, 301 Howard St., 15th Floor, San Francisco, Calif. 94105, or fax (415) 243-3650. No training or educational seminars please.

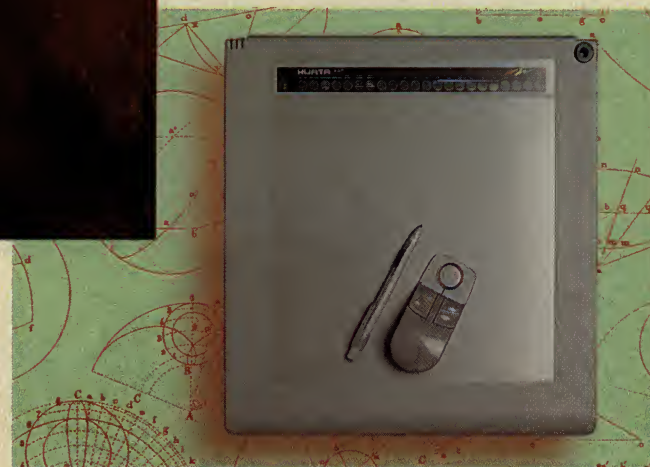


"Rembrandt Redhead" created by Rhoda Grossman, using Fractal Design Painter and Adobe Photoshop. Original photography by Joel Meyercowitz.

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*For each 30-day free trial offer, the XGT unit will be secured with customer credit card or check. The card or check will be processed 30 days after receiving order, only upon verification of complete customer satisfaction. Customer may return XGT anytime within the 30-day period to cancel order. KURTA, SWASH, XGT are registered trademarks of Kurta Corp. Fractal Design Painter is a registered trademark of Fractal Design Corp. Adobe Photoshop is the registered trademark of Adobe Systems Inc.

Apple and a higher standard

Introducing the LaserWriter® Pro 600 and 630 printers from Apple.

Never before have workgroup printers this affordable produced this level of output.

Offering you true 600-dot-per-inch resolution, they deliver more than four times



The LaserWriter Pro 600 and 630 feature PhotoGrade, an Apple breakthrough allowing you to print up to 91 levels of gray—that's 35% more grays than with our award-winning LaserWriter IIg.

the definition of comparably priced 300-dpi printers.

Both models incorporate an Apple breakthrough in gray-scale printing called PhotoGrade.™

A process that intelligently adjusts the size and position of every dot in relation to neighboring dots, allowing you to print up to 91 levels of gray at 300 dpi.

That's equivalent to a 1,000-dpi printer costing mountains more.

The result is noticeably sharper details and the ability to reproduce the subtle tones of gray in black-and-white photographs.

But even when you don't integrate photos into your documents, you'll still notice the difference. Because



Both LaserWriter Pro models come with two paper trays and a host of paper-handling options, including a 500-sheet feeder and a 75-envelope feeder.



Apple's FinePrint™ technology gives your text and line art cleaner edges and smoother curves. So your TrueType™ and PostScript™ Type One fonts have never had more impact.

Any way you look at it, your work looks better coming out of a LaserWriter Pro.

Two paper trays come standard, along with an array of options including a 500-sheet feeder and a 75-envelope feeder for a total paper-handling capacity of 850 sheets.



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nounces of laser printing.



able to move even the largest, most complicated image files and print them at speeds rivaling any RISC-based printer.

And if you happen to work in a mixed environment, both LaserWriter Pro models fit right in. They support PCL page description language and can easily accept jobs from Macintosh® and Windows-equipped computers simultaneously.

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LaserWriter Pro 630 vs. HP LaserJet 4M

Price:	\$2,529*	\$2,999†
Gray levels:	91	51
Macintosh fonts:	64 TrueType	None
	35 PostScript	35 PostScript
PPM:	8	8
Ethernet:	Built in	Optional
RAM:	8MB	6MB

In fact, Apple® LaserWriter printers were recently ranked highest in Overall Laser Printer Customer Satisfaction by J.D. Power and Associates.* Outranking Hewlett-Packard.

To see why, visit your authorized Apple reseller for a full demonstration.


You'll find that the LaserWriter Pro has the power to elevate your work to a level ordinary printers can only aspire to.

The power not just to look your best. The power to be your best.®

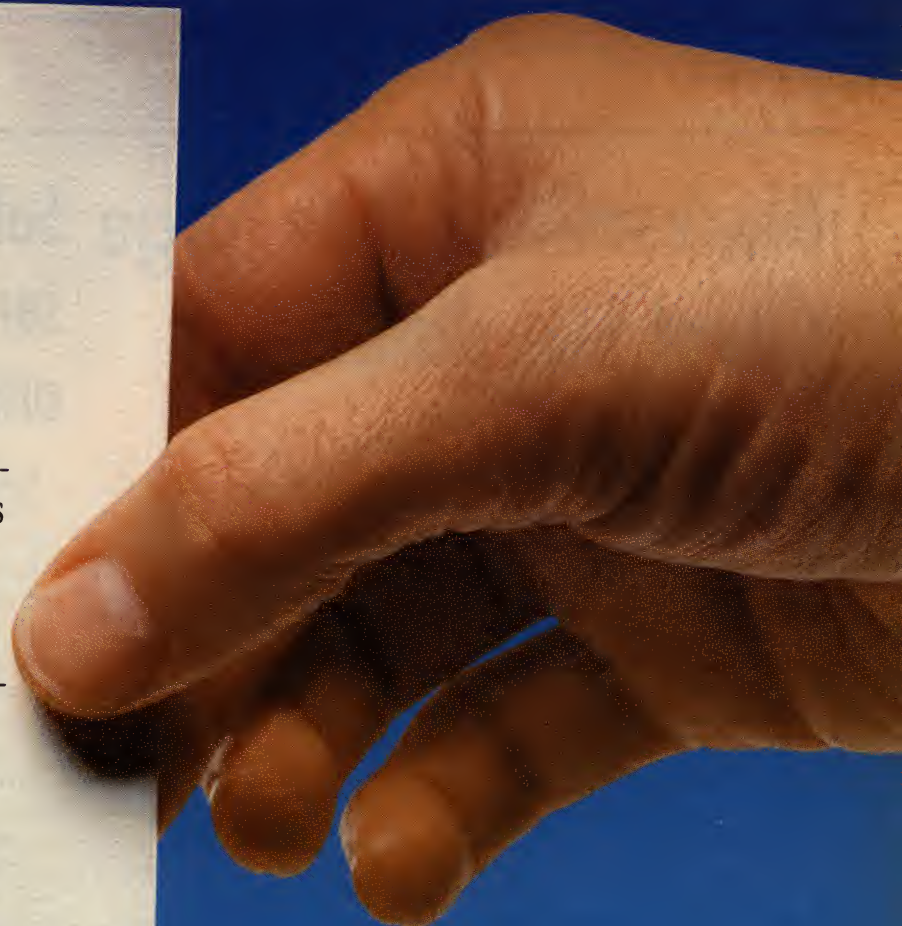
You can also select and switch paper trays right from your computer and print a letter, complete with second sheet and envelope, without ever leaving your desk.

No other printer in the industry allows you to do so much so easily for so little.

For high-performance networks, the 630 features built-in Ethernet. So you'll be

The new LaserWriter Pro series from Apple. 

are trademarks of Apple Computer, Inc. Adobe, PostScript and the PostScript logo are trademarks of Adobe Systems Incorporated, which may be registered in certain jurisdictions. Hewlett-Packard, LaserJet and PCL among 1,707 business end users at 848 business sites. *Manufacturer's suggested retail price. Actual output size 8 1/2" x 11". This ad was created using Macintosh personal computers and Apple LaserWriter printers.



The screenshot displays a gas chromatography software interface. At the top, a menu bar includes 'File', 'Edit', 'Settings', 'Utility', 'Keys', 'Log', 'Script', and 'Graphs'. Below the menu bar, a status bar shows 'Session™ from TymiLab'. The main window is titled 'Graphics' and displays a chromatogram plot. The plot has a y-axis labeled 'Detector Response mVolts' ranging from 0 to 110 and an x-axis labeled 'Elution Time Minutes' ranging from 0 to 10. Two peaks are visible: a sharp peak at approximately 3.2 minutes and a broader peak at approximately 7.5 minutes. The text 'Standard' is displayed at the top left of the plot area, and '0680' is displayed at the top center. The text 'Trace #050758-L6w' and 'Sample ID #121291-14' is displayed on the right side of the plot. The left side of the interface contains a control panel with buttons for 'SAMPLE ID #', 'RUN #', 'TECHNICIAN', 'TEST PAIRS', 'PRESS F3 TO PLOT', 'PLOTting...', 'PLOT COMPLETE.', 'CONTINUE? [Y/N]', 'Execute Command', and 'List Ref.'. The bottom status bar shows 'Elution Time JN002', 'Not analyzed yet', 'Inject time: 13:36:30', 'Instrument: 53', 'Minutes 9/21/1991', and 'Vial: 0'.

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AsantéView in-band network management software supports the widely

accepted Simple Network Management Protocol (SNMP), and can automatically draw a map of your network which simplifies the learning and administering of IP addressing.

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hi-BBS supports XTND, more conferences

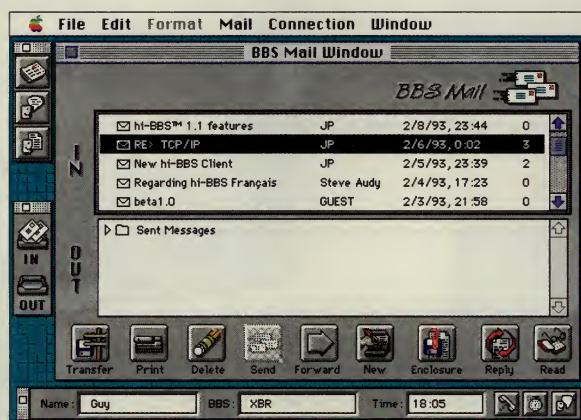
Version 2.0 to work with AppleScript

By Nathalie Welch

Montreal — XBR Communications this month announced an upgrade to its bulletin board system and revealed plans to make a future version compatible with Apple's forthcoming AppleScript.

Offering full-featured electronic mail, forum sections and live conferencing, hi-BBS 1.1 adds support for multiple on-line conferences and the ability to add and remove modem lines on-line without shutting down.

New compatibility with XTND file-translation technology lets clients open any type of document on-line. In addition, users are notified automatically of incoming mail and can listen to and record voice messages. Users also will be able to attach multiple selected files and select mul-



XBR Communications' hi-BBS bulletin board system features a server that can be controlled via Apple events and grants both Macs and IBM PCs and compatibles access.

tiples to be downloaded at once.

In hi-BBS 1.1, the hi-BBS server is controlled via Apple events. Once the AppleScript-compatible hi-BBS 2.0 is released in June, scripted events can be sent to shut down or launch the server or make changes to the user list.

The package's price is based on the number of simultaneous connections the server can handle. A

two-line configuration is \$369 while a package supporting an unlimited number of channels is \$3,069.

XBR Communications is at 5253 Decarie Blvd., Suite 350, Montreal, Quebec H3W 3C3, Canada. Phone (514) 489-1001; fax (514) 489-4966. □

Cayman revises router software

By April Streeter

Cambridge, Mass. — Cayman Systems Inc. last week shipped a router software upgrade that promises network managers a better view of GatorBox and GatorStar routers on their networks.

Release 2.2 of software for the \$2,795 GatorBox CS and the \$3,595 GatorStar adds three MIBs (Management Information Bases), including Apple's, to provide statistics on Cayman routers to any applications that support SNMP (Simple Network Management Protocol).

The upgrade, originally scheduled to ship last November, offers enhanced port mapping that lets it

monitor traffic levels and the number of errors generated from LocalTalk nodes attached to a specific box.

Release 2.2 automatically disables a malfunctioning port on the GatorStar, which is a 24-port LocalTalk repeater in addition to a router. The port is restored when normal functioning resumes.

Upgrades are free to GatorStar customers or GatorBox users on Cayman's software maintenance plan. All others pay \$199.

Cayman Systems Inc. is at University Park at MIT, 26 Landsdowne St., Cambridge, Mass. 02139. Phone (617) 494-1999; fax (617) 494-9270. □

Z-Mail

From Page 18

multipart documents and multimedia formats also will be supported.

Z-Mail for Macintosh will provide users with rule-based filtering, sorting and searching capabilities. Users can automate their mail environments with Z-Script, a scripting language for users and mail administrators. Z-Script also can be used to modify or create customized user interfaces.

Z-Mail for Macintosh eventually may support additional E-mail standards, including Novell Inc.'s Message Handling Service, Microsoft Corp.'s Messaging Application Programming Interface and Vendor-Independent Messaging, according to Z-Code.

Z-Code Software Corp. is at 4340 Redwood Highway, Suite B-50, San Rafael, Calif. 94903. Phone (415) 499-8649; fax (415) 479-0448. □

Blacksmith

From Page 18

mation about the terminal screens it generates, and later develop a front end while disconnected from that server. Blacksmith will provide simulations of the way the host would react to the front end, even though the developer is working off-line.

CEL said it will ship a Microsoft Windows version of Blacksmith this spring.

Pricing has not been determined, but CEL said Blacksmith 2.0 will cost more than Version 1.0, which sells for \$8,500 for the development environment, 10 user licenses and three days of on-site CEL consultation.

CEL Software Inc. is at P.O. Box 8339, Station F, Edmonton, Alberta T6H 4W6, Canada. Phone (403) 463-9090; fax (403) 428-5376. □

LineShare

From Page 18

LineShare will take over the port and dial the number.

When a connection is established, LineShare will connect the subport to the modem to let the session begin.

Upon completion or interruption of the session, LineShare will disconnect the subport from the telephone line while it restarts monitoring of the serial port inbound calls.

LineShare will require special scripts for each set of programs, modem configuration and different types of incoming calls. These scripts will be available via on-line services, while scripts for several popular configurations will be included with LineShare. Users also

will be able to create their own scripts using the LineShare scripting language.

In other news, PortShare Pro port-sharing software, available now at \$189 for 10 users, will let network users access the serial devices connected to other users' Macintoshes.

LineShare was developed at the University of Moscow for Stalker Software GmbH of Cologne, Germany, which also developed PortShare Pro. The U.S. company GlobalWay, which has merged with Stalker Software GmbH, will soon change its name to Stalker Software Inc.

GlobalWay is at P.O. Box 1631, Campbell, Calif. 95009-1631. Phone (408) 866-4722 or (800) 262-4722; fax (408) 370-3170. □



Gateways

BRIEFS

CompuServe raises monthly fees, cuts hourly charge

Columbus, Ohio — CompuServe Inc. this week is modifying its Standard Pricing Plan, slightly increasing monthly fees while reducing hourly connect-time charges.

Under the new Standard Pricing Plan, effective Feb. 28, members will pay \$8.95 per month to access a group of 36 basic services. To access services outside the group, users will pay \$8 per hour at 1,200 or 2,400 bps and \$16 for 9,600-bps access.

Previously the Standard Pricing Plan cost \$7.95 per month, while services outside the basic group cost \$12.80 to \$22.80 per hour, depending on connect speed.

CompuServe Inc. is at 5000 Arlington Centre Blvd., P.O. Box 20212, Columbus, Ohio 43220. Phone (614) 457-8600; fax (614) 457-0343.

AppleShare users can get free bug-fix upgrade

Cupertino, Calif. — Apple is offering AppleShare users a free upgrade to Version 3.0.1, the bug fix that shipped late last year.

AppleShare 3.0.1 improves compatibility with CE Software Inc.'s QuickMail 2.5 and Dantz Development Corp.'s Retrospect Remote. It works with System 7.1, and users may notice increased client performance during file duplication, according to Apple. To receive the free upgrade, AppleShare users must get a coupon from either a dealer or off AppleLink in the Apple Sales & Marketing: Apple Programs forum. The original sales invoice or AppleShare 3.0 disks must be turned in along with the coupon for each upgrade requested.

The upgrade offer expires April 1. AppleShare 3.0.1 is priced at \$1,199. For more information call (612) 835-0244.



AppleShare

Lotus ships cc:Mail Link to SMTP 2.0 gateway

Cambridge, Mass. — Lotus Development Corp. last week shipped its cc:Mail Link to SMTP 2.0 gateway, offering administrators simplified menu-driven installation and improved throughput.

Priced at \$3,495, the dedicated, DOS-based gateway connects cc:Mail users on Mac, DOS, Windows, OS/2 and Unix platforms with Unix networks, such as the Internet.

Version 2.0 provides new configuration utilities enabling administrators to customize the gateway, such as limiting message size. In addition, the package supports simultaneous sending and receiving of electronic-mail messages and the ability to automatically map Internet addresses to cc:Mail addresses.

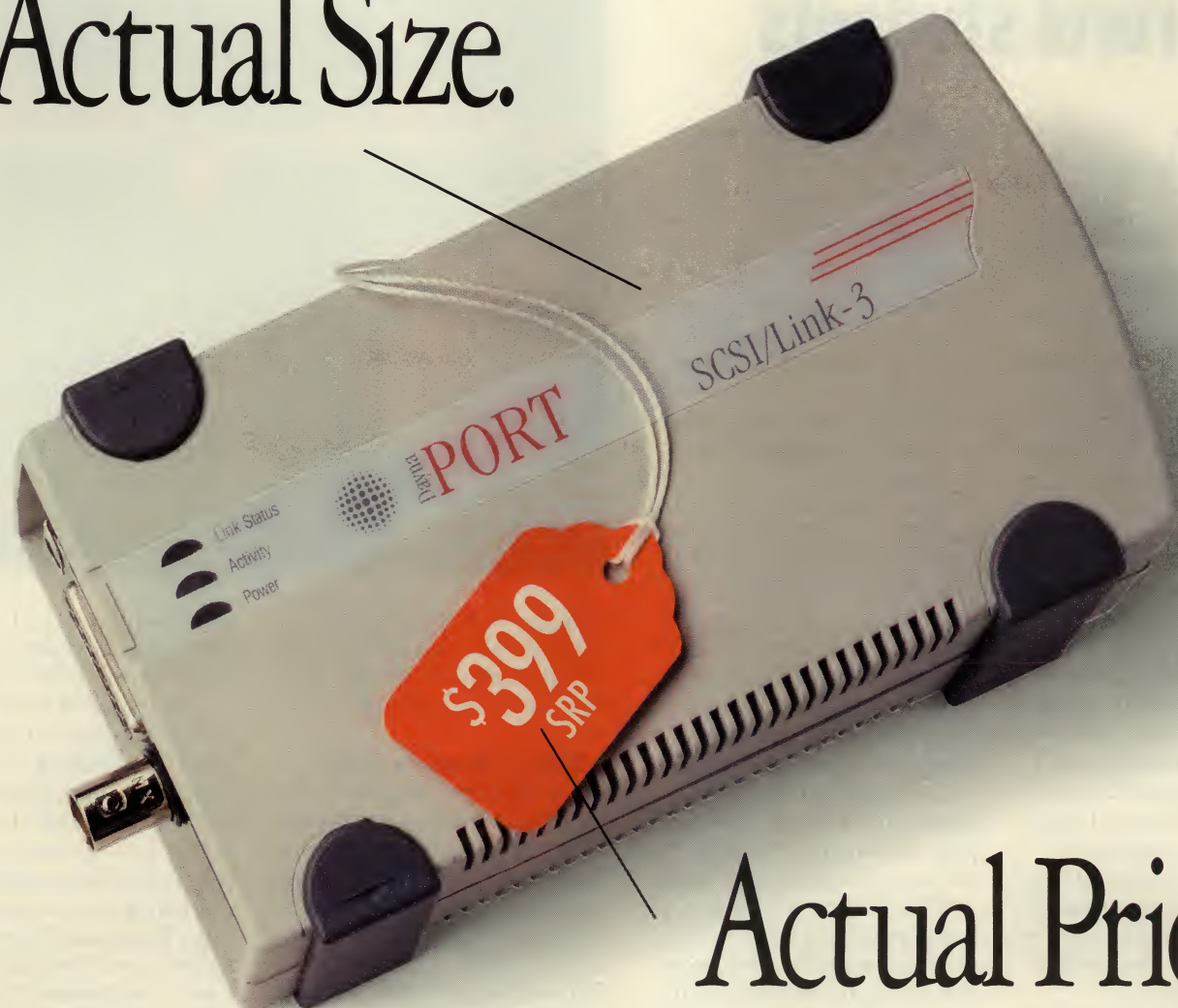
Owners of any previous version can upgrade for \$495.

Lotus Development Corp. is at 55 Cambridge Parkway, Cambridge, Mass. 02142. Phone (617) 577-8500.

"The smallest, lightest SCSI Ethernet interface available for the Mac."

—MacUser, February 1993

Actual Size.



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Macintosh SCSI Ethernet Adapter Comparison	DaynaPORT SCSI/Link	Asanté EN/SC	Focus EtherLAN SC
Dimensions	6" x 3" x 1.75"	8" x 4" x 1.5"	7.5" x 5.5" x 1.5"
Weight	13 oz.	24 oz.	25 oz.
Pass through SCSI	Yes	Yes	No
SCSI termination switch	Yes	No	No
3-in-1 models available	Yes	Yes	No
Autosensing Ethernet ports	Yes	No	No
Onboard SCSI controller	Yes	No	Yes
100% Apple SCSI compatible†	Yes	No	No
SCSI cable included	Yes	Yes	No
Warranty	Lifetime	5 years	5 years

But don't just try us for our size. Compare us feature for feature with our competition and you'll see that we've packed a whole lot of value into a very small product. SCSI/Link includes two SCSI ports and a handy termination switch, so it's easy to connect anywhere in your SCSI chain. And unlike our competitors, we designed our product to be fully compatible with Apple's SCSI Manager, for maximum reliability and compatibility with all Mac models.

Add to that our reputation for quality engineering design and manufacturing, our superb technical

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†Only SCSI/Link fully implements the IEEE SCSI specifications without modifying the Apple SCSI Manager.

*Retail prices for SCSI/Link range from \$399 to \$499 depending on model. Actual prices (street prices) for all our products are typically about 25% to 30% less than retail. Check with your favorite reseller for current prices.

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Case Study

Mac satellite network passes the test for rural students

Satellite net saves time and money while giving quicker feedback to students and teachers.

By George Lawton

When rural students in a dozen Western states gaze at the heavens, they're not necessarily daydreaming. It may be that they're looking for their homework.

Some 13,000 children are receiving homework, tests and other schoolwork via a Macintosh-based satellite network operated by the Educational Service District 101 in Spokane, Wash. The Mac data network operates in tandem with a videoconferencing system used to overcome the shortage of teachers in rural areas.

Snail mail. Since 1986, the videoconferencing service has provided remote schools access to skilled teachers in math, science and foreign languages. It has offered up to 13 hours a day of programming, including advanced-placement courses. But until recently, District 101 relied on mail to send and receive tests and other work. Often, it would sometimes take two weeks to turn around test results, said Steve Witter, manager of governmental affairs for the district.

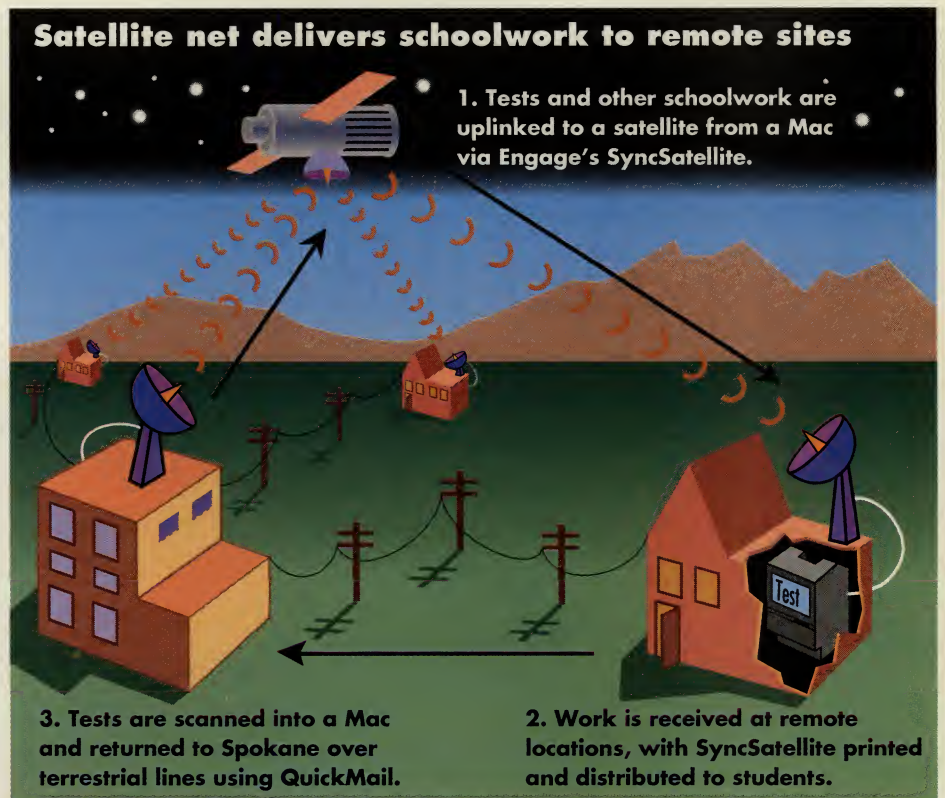
After receiving a U.S. Department

of Education Star Schools grant in 1990, the district's STEP Star Schools Network began looking for a faster way of communicating. Based on that search, it turned to Engage Communication Inc. of Aptos, Calif., which offers SyncSatellite, an AppleTalk router and software system capable of uplinking Mac files and folders to a satellite. This data can be downloaded to one or several Macs at remote sites equipped with SyncSatellite software.

"It's incredibly easier," said Debbie Willson, an instructor who teaches calculus to about 30 of the sites. "Before, I had to plan at least two weeks in advance to get everything in the mail. Now, it's easy to find something and send it out."

Teachers such as Willson use SyncSatellite Publisher software to choose what tests, notes and PostScript documents they plan to upload to the network. Then they place all files to be uploaded into a mailbox with a preset delivery time.

When Willson's class begins, the Publisher software uploads the files to one of the satellite's audio channels. During her presentation, the schools receive the files at 57 Kbps



NEVIN BERGER

through a 10-foot satellite dish linked to a Mac via a satellite receiver from Chaparral Communications Inc. of San Jose, Calif.

Back to Spokane. When Willson's lesson is complete, the tests are printed out and answered by the students. The answers are scanned into Macs with a Pentax Teknologies Corp. IQ Scan scanner. Then the tests are sent back to Spokane via terrestrial telephone lines using CE Software Inc.'s QuickMail so they can be graded by Willson and her

assistants that evening. The next day, during class, the graded tests are returned to the students via satellite.

"The real payoff for us has been in saving time, paper and postage and giving quick feedback to the students and teachers," said Don Egge, Star Schools director. "It's important for them to know as soon as possible how they are doing, rather than having a two- or three-week delay. The potential is even greater for the future." Eventually Egge hopes to use the same system for administrative purposes as well. □

Sending graphics by satellite

In New York, Independent Network Systems has begun experimenting with using Engage Communication Inc.'s SyncSatellite to broadcast graphics to newspapers.

INS has a graphics-distribution service called Art Express, which transmits graphics from Knight-Ridder Inc. and The New York Times Co. to more than 150 sites throughout the United States. INS has started using SyncSatellite to send data to two customers over the network.

Ramesh Ramcharitar, operations supervisor at INS, said that if all goes well the company eventually will use the system to transmit graphics to all its clients.

INS currently relies on an analog network to transmit the graphics. Received images are printed out in black and white on an 890-to-1,200-dpi fax machine. Each fax machine costs \$100,000, and the output must be scanned into a computer before being integrated into the publishing process.

Ramcharitar said the satellite system costs about \$11,000 per site to install. Because it uses a digital format, it can compress images eight to 10 times for faster transmissions. The greatest benefit is that the images are downloaded directly into the Mac network, where they can be copied into the publication automatically.

One of the greatest limitations with the SyncSatellite system is that it broadcasts data from only a single site. Many corporations have begun turning to very small aperture terminal satellites, which allow them to broadcast data from any point in the network. However, no one has begun adapting this technology to the Mac on a large scale. — By George Lawton

Foxboro overhaul proves that less is more

Five-year

plan cuts

costs and

improves

the flow of

information.

By George Lawton

Imagine a \$10 million return on a \$14 million network-computing investment. That's what the Foxboro Co. of Foxboro, Mass., achieved last year after completing a five-year modernization program that completely overhauled its computing infrastructure.

All the trimmings. Since 1987, the manufacturer of industrial control equipment has reduced annual expenses from about \$28 million to \$18 million, while re-engineering its networked information resources to improve the flow of information throughout the company.

In a clear case of less being more, Foxboro cut its MIS staff from 225 loosely allied people to a coordinated team of just more than 100. Another key cost saver was the elimination of mainframes in lieu of Unix-based servers from Sun Microsystems Inc., Hewlett-Packard Co. and Digital Equipment Corp.

Sneakernet communications.

Like many businesses, Foxboro historically had a laissez-faire attitude about computer purchases. Each department had been responsible for buying its own equipment, which led to the company acquiring

See Foxboro, Page 26



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		10T+FPU	\$399
		Thin+10T	\$329
		Thin+10T+FPU	\$479
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Ether10-T AUI	\$149	Thick+Thin	\$299
Ether10-T AAUI	\$149	Thick+Thin+FPU	\$449
		Thick+10T	\$299
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3-way	\$329	3-way	\$379
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Foxboro

From Page 22

a hodgepodge of Macs, IBM PCs and compatibles, mainframes, and minicomputers that could not talk to each other.

"We had Wang systems and Macs in LocalTalk, Novell networks and DEC Pathworks systems with no central focus," said John Puckett, Foxboro manager of engineering and network services. "We recognized our systems were aged, fragile and undocu-

mented. Critical information was prevented from flowing through the organization." Transferring information from one department to another often was accomplished on "sneakernet" via floppy.

Foxboro now has one coordinated system. Puckett said: "We set corporate standards for our worldwide operations: TCP/IP, SNMP (Simple Network Management Protocol), X.25, NFS (Network File System) and PCNFS. We redefined the role of MIS. We

took on responsibility of networks and network standards and drove that."

NFS for Macs. The company's 200 Macs are integrated into the new system via NFS using Herndon, Va.-based InterCon Systems Corp.'s TCP/IP Connect II, NFS/Share and InterPrint software. Since NFS is a company-wide standard, the Macs can share information with any computer on the network. Previously, the Macs were confined largely to

data stored on VAX networks, using Pacer Software Inc.'s PacerLink and PacerShare.

Foxboro had three motivations for the automation program, Puckett said. For starters, the financial systems were not timely or flexible enough to meet the needs of the market. Second, the company wanted to be more competitive. But the driving motivation was that Foxboro wanted to build an information system that was capable of supporting a new product range called Intelligent Automation.

Foxboro now is selling process-control systems made up of a number of computers connected through a peer-to-peer network. These can be used to run power stations or factories. "This new product line needed a whole new set of processes to support it," Puckett said.

Upgrading the network helped Foxboro trim 75 percent of the time required to process orders. It also cut down the time needed to design new components. Puckett said a revision used to take seven hours using mechanical CAD and now takes only 25 minutes on the network.

Retooling. Retooling the network also required a massive reorganization of Foxboro's MIS department. Nearly all the managers were replaced, and 75 percent of the staff was redeployed to other areas.

Puckett said, "We transitioned MIS with new skill sets for diagnosing the equipment and understanding interoperability and the new standards."

Maintenance costs have dropped sharply since the company replaced its mainframes with workstations, which are almost as powerful and require no air conditioning, saving the company on energy bills. Foxboro used to pay \$5,000 a month to maintain each mainframe. The Unix-based servers, on the other hand, require only about \$300 worth of care each month.

Another component of the cost savings was Foxboro's decision to phase out its private X.25 network and move to Internet Protocol routing. John Sinclair, director of corporate telecommunications services, said, "Our experience has shown [that] approximately a 40 percent overhead is incurred when routing LAN traffic over an X.25."

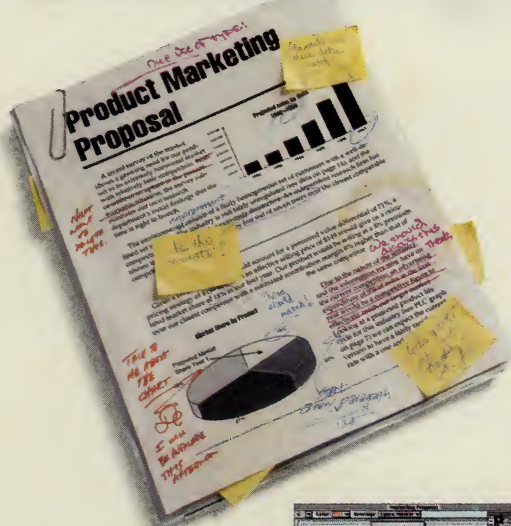
Living with regret. If Puckett had it all to do over, he said he would have implemented network management at an earlier stage. "We did not anticipate the complexity of the interrelationship between the networks," he said. "With network islands, troubleshooting was easy. With an interrelationship model, things happen that you don't anticipate."

"What you can't measure you can't manage," he said. "What you can't manage you can't control, so you are flying blind in many areas."

Puckett said he eventually hopes to tie network management directly into network control. Foxboro is counting on intelligent Ethernet cards being available soon that can be throttled back in times of heavy traffic using SNMP management protocols. That way, mission-critical applications will always get the bandwidth they need.

Asked about his vision, Puckett said: "We don't do things for technology's sake; there has to be a real good financial reason. We like to consider ourselves a service organization, and everything we do is determined by our customers." □

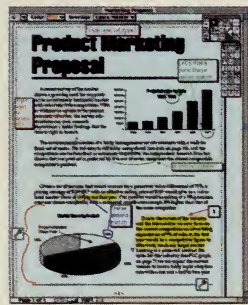
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You've put a lot of work into that document. Now you just need to show it to a few people, get their comments, and it will be golden. Unfortunately, this usually means passing out copies to each reviewer in a group, then waiting to get the copies back, only to end up with a stack of papers covered with scribbled marks and little stick-on notes. So much for feedback.

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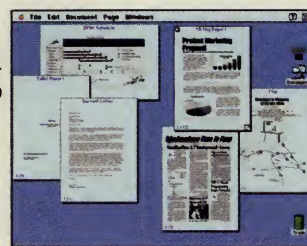
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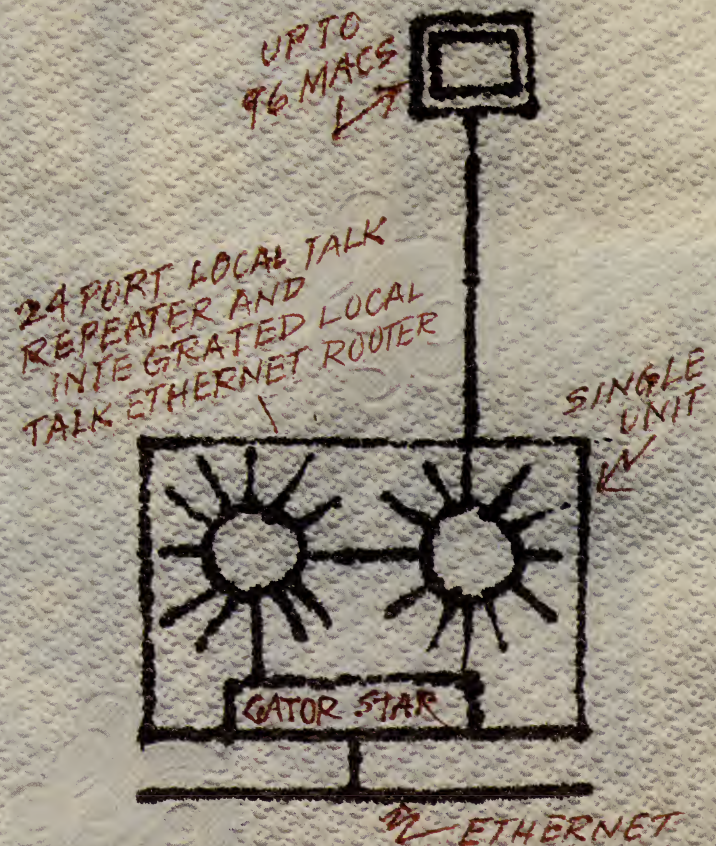
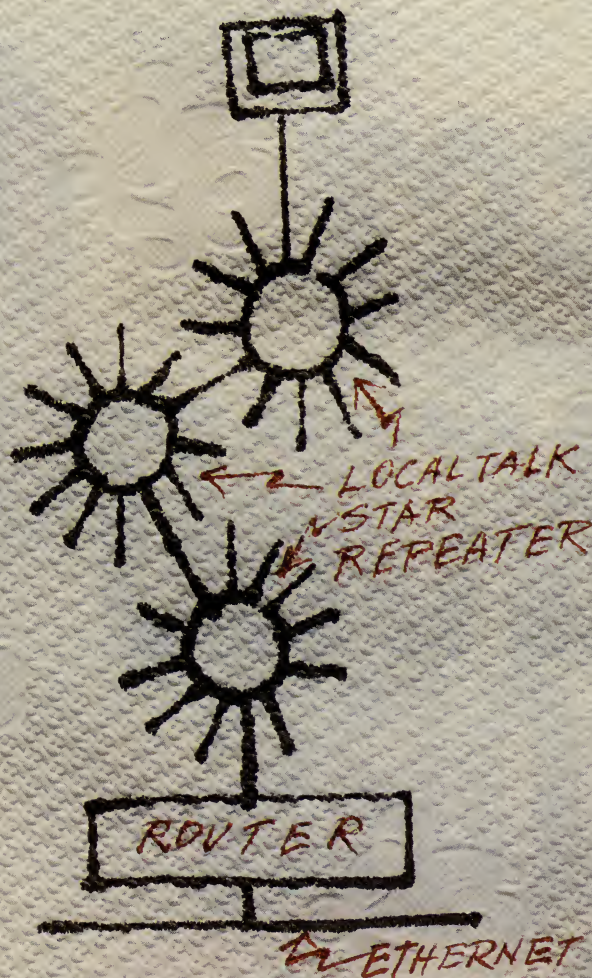
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The first LocalTalk-to-Ethernet router-repeater that integrates the active star capabilities of a 24-port LocalTalk repeater with a high performance, multiprotocol gateway.

Unlike daisy chaining, GatorStar combines two 12-port active star repeaters with the most powerful, most advanced LocalTalk-to-Ethernet gateway ever to be developed, the GatorBox CS®.

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It also means that GatorStar is easier to manage than separate repeaters and routers. For instance, you can readily locate individual Macs or restart ports from any

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GatorStar's 16.7 MHz 68302 processor and direct memory

The Case for GatorStar GX

The Repeater

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The Bottom Line

- Integrated LocalTalk-Ethernet repeater/router
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PLANNED GROWTH

To Matthew Long, it just didn't make sense.

His beloved hometown of Elke, Maine, has had a severe housing shortage ever since the big pizza-sauce factory opened in nearby Bucksport.

Workers—who have done much to spur the local economy—are doubling, even tripling up in small apartments. Some are even sleeping in cars.

Mr. Long, who happens to be a contractor, wants to help by building



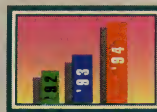
any more strangers than the ones we have now."

Mr. Long sees it differently. "I think it's pretty cheesy. Everyone was a stranger here at one time or another,

affordable new homes for these workers. Unfortunately, that's the last thing the Elke Zoning Board wants to happen.

Elke, they say, has enough houses. "We have to control our growth," says Barney Hotchkiss, longtime resident and curmudgeon. "We don't need

While the current recession has generally eased much of this country's growth problems, in any areas it has not abated at all. In Las Vegas, population increases



LAS VEGAS - Ever since gambling came to the desert town, people have, too. Between 1970 and

1970, its population almost doubled. By 1990, over a quarter-million people were calling it home.

If trends continue, say experts, Las Vegas will have a serious crisis on its hands.

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Photoshop 2.5 pushes performance

Offers new paths, channels palettes

By Neil McManus

Mountain View, Calif. — Adobe Systems Inc. this month shipped Photoshop 2.5, an upgrade that improves performance and adds previews and new channels and paths palettes.

Priced at \$895, the new version works twice as fast as its predecessor on painting functions and refreshes zoomed-out images one and a half times as fast, Adobe said.

In addition, third-party accelerator boards can speed native Photoshop 2.5 functions, such as brushes, color conversions, rotate and resize. Digital signal processor cards and RISC boards are offered by DayStar Digital Inc., SuperMac Technology Inc., Spectral Innovations Inc., Newer Technology and RasterOps Corp.

Version 2.5 includes a new channels palette that lets users choose channels quickly for editing. Alpha channels can be used for transparent overlays. A new paths palette con-



Adobe Photoshop 2.5 includes dodge and burn tools that let users lighten and darken portions of an image. Users also can control the pressure of the stylus.

trols pen-tool functions. Users now can view an image while painting a mask and stroke along a path with painting tools.

The upgrade's color palette lets users save and load custom palettes. Users can view different color combinations in a new scratch area

before applying them to an image. A new CIE XYZ color mode offers device-independent color via PostScript Level 2.

Photoshop 2.5 users can view and edit masks with toolbox controls through the program's new Quick Masking feature. Manipulations can be viewed in a screen-resolution

See Photoshop, Page 32

Avid packages digital-audio system that synchronizes sound with video

By Kirsten L. Parkinson

Tewksbury, Mass. — Avid Technology Inc. last month shipped AudioVision, a digital-audio editing workstation that also can synchronize sound with digital video.

AudioVision comprises a complete system for editing and storing sound. It includes software, a Quadra 950 with a 240-Mbyte hard drive and 16 Mbytes of RAM, two multisync color monitors, an external 1-Gbyte hard drive, a video-compression board, sound and SCSI accelerator cards, and an analog-to-digital audio interface.

Users can import video in edit-decision list format directly from Media Composer, Avid's video-editing system, or other systems. These video clips then can be stored in AudioVision and synchronized to digital-audio clips.

Other features of AudioVision include:

► **Time-line view.** The system displays clips as bars on a time line for visual placement and editing.

► **Workreels.** AudioVision provides a databaselike system for storing, managing and accessing video and audio clips.

► **Loop and nudge.** Users can quickly play back a specified portion of a longer clip several times for detailed synchronization of an audio clip. As the clip plays back, users can move the audio clip forward or backward frame by frame.

► **ADR/Foley systems.** AudioVision includes a special mode for users who need to replace sections of dialogue or sound effects.

AudioVision is available in two configurations. The \$45,000 Model 4 supports four audio channels and comes with 14-inch monitors; the \$65,000 Model 8 supports eight audio channels and comes with 19-inch monitors.

Avid Technology Inc. is at Metropolitan Technology Park, 1 Park West, Tewksbury, Mass. 01876. Phone (508) 640-6789; fax (508) 640-1366. □

DeBabelizer smooths batch conversions of images

By April Streeter

Sausalito, Calif. — Equilibrium Technologies Inc. this month introduced an upgrade to DeBabelizer designed to simplify the batch conversion of bit-mapped images between platforms.

Version 1.4 of the \$299 image-conversion program lets users batch-process files through menu choices. Previous versions required scripting to enable batch-processing options, such as turning a batch of graphics files into thumbnails. The software generates picture icons for a batch of graphics files to create a simple image directory.

DeBabelizer users can manipulate images with third-party Adobe Photoshop filters that appear in submenus in the new version. The program does not support Photoshop filters created by Adobe Systems Inc.

In addition, Version 1.4 lets users set the transparency level of images for compositing or traveling mattes.

Canon software gives Mac control of NeXT-based image server

By April Streeter

Lake Success, N.Y. — Canon U.S.A. Inc. in April will unveil NeXT-based image server and database software that can be controlled by the Mac.

Canon's OPI Server Software, to be priced at \$9,995 for 10 users, will allow networked users to proof images on the \$49,000 Canon CLC 500 color laser copier. It will require Electronics for Imaging Inc.'s Fiery RIPs (raster image processors), which start at about \$20,000.

The software will control the Canon copier/printer, manage an image archive and handle print services for PostScript printers on the network. The current version runs on a workstation from NeXT Computer Inc., and future versions will be compatible with Sun SPARCstations. A second release of the software, due later this year, will include NeXT and Microsoft Windows clients.

From the Mac, users will be able to browse the NeXT image database and manage the network's print queues.

The software creates thumbnails, low-resolution versions, small pre-

views and full-screen snapshots of archived images.

Users can place low-resolution versions of images into QuarkXPress or Aldus PageMaker documents. When printing a layout, the server automatically retrieves the high-resolution version of the image.

The OPI Server Software was developed by Information Presentation Technologies Inc. of San Luis Obispo, Calif. Canon and IPT will distribute the package through the National Office Machine Dealers Association, which includes 4,500 dealers that sell copiers and other office equipment and now will resell NeXT hardware and Canon software.

Canon reportedly is taking over some of NeXT's hardware manufacturing (see MacWEEK, Feb. 15).

Canon U.S.A. Inc. is at 1 Canon Plaza, Lake Success, N.Y. 11042. Phone (516) 488-6700; fax (516) 488-3623.

The National Office Machine Dealers Association is at 12411 Wornall Road, Kansas City, Mo. 64145. Phone (816) 941-3100 or (800) 247-2176; fax (816) 941-4838. □



Equilibrium Technologies' upgrade to DeBabelizer allows users to join bit-mapped images and create composites by changing the color or making the image backgrounds transparent.

DeBabelizer translates to and from more than 45 bit-mapped graphics and animation file formats for a variety of platforms, including Mac, MS-DOS, Windows, Commodore Amiga, Apple II and Atari ST. It also supports formats for workstations from Sun Microsystems Inc. and Silicon Graphics Inc.

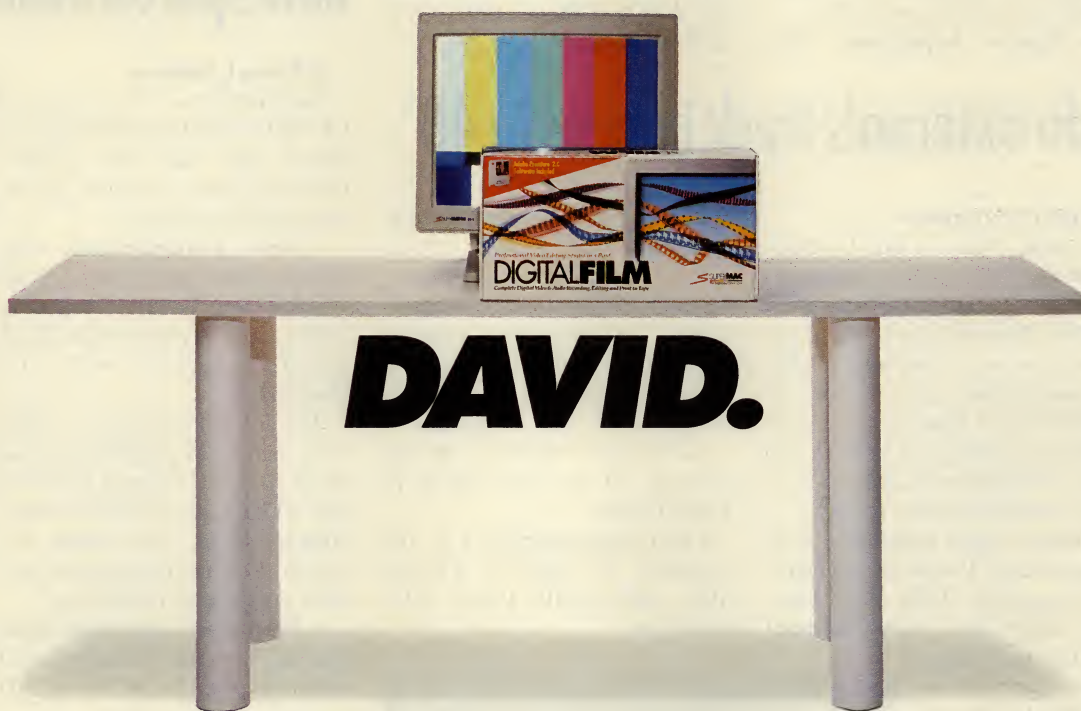
An optional \$150 add-on to the program provides conversion of

images to eight different CD-I formats. A package that lets users convert images to Digital F/X Inc.'s TitleMan or Video F/X formats is \$199.

Upgrades to Version 1.4 are free. Equilibrium Technologies Inc. is at 475 Gate Five Road, Suite 225, Sausalito, Calif. 94965. Phone (415) 332-4343 or (800) 524-8651; fax (415) 332-4433. □



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Zephyr extends PageMaker controls

Addition runs scripts over multiple docs

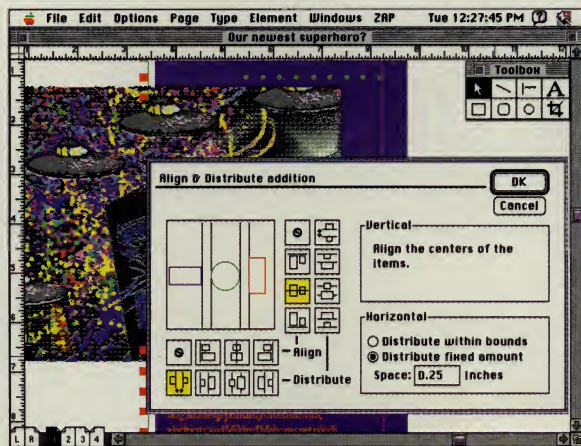
By Carolyn Said

Seattle — Zephyr Design has ushered in a trio of new Additions that lets Aldus PageMaker users batch-process scripts over multiple documents and maintain greater control over alignment and snap-to guides.

► **Zephyr DisBatch.** Available now for \$99.95, this Addition batch-processes scripts and optimizes publication size.

PageMaker comes with an Aldus Addition for writing simple scripts to automate functions such as changing fonts. Users ordinarily must apply scripts to a single document at a time. DisBatch lets users select multiple PageMaker documents and have them run a script.

DisBatch comes with a scripting guide and several prewritten scripts that automate functions such as printing, printing thumbnails, turning on smart quotes and creating a text field for copyright notices.



Zephyr SmartAlign, an Aldus Addition, lets users align objects horizontally or vertically by top, bottom or center. It also lets users distribute objects within a bounding box or by user-specified distances.

DisBatch can reduce storage space by removing PageMaker instructions appended to files with each Save. It does this by batch-processing a Save As of each publication under the same name.

DisBatch requires System 7 and works with PageMaker 4.2 as well as the forthcoming PageMaker 5.0.

► **Zephyr SmartAlign.** As its name implies, this Addition helps PageMaker users align and space objects in relationship to each other. It ships this week for \$89.

► **Zephyr SuperSnap.** This

Addition includes a floating palette that lets users snap objects to other objects, grids or ruler guides quickly. In addition, SuperSnap nudges objects and snaps the center of objects onto grids or objects. It is scheduled to ship this week for \$89.

SmartAlign and SuperSnap can be purchased in a bundle for \$129. Both work with PageMaker 4.2 and 5.0, as well as systems 6 and 7.

Zephyr Design is at 800 Fifth Ave., Suite 296, Seattle, Wash. 98104-3191. Phone (206) 324-0292; fax (206) 324-0995. □

Photoshop

From Page 30

Fast Preview. New dodge and burn tools let users lighten and darken portions of an image.

John Lund, a San Francisco-based advertising photographer, said that working with the pen tool and paths is easier with Photoshop 2.5. "When you're using the pen tool, you no longer have to go through a lot of rigmarole to switch to another tool," Lund said. "Also, you can stroke a fragment of a path or have a path present at the same time as a selection." Lund said that the new version lets him create more natural-looking photo illustrations. "I can add soft edges to brushes now so I can have a smoother transition when I'm cloning something."

Upgrades to Version 2.5 are \$129 until April 30 and \$179 thereafter. A Deluxe CD-ROM Edition 2.5 upgrade will be offered at \$199 until April 30 and \$249 thereafter. The CD-ROM version includes an interactive tour of the program and 50 royalty-free stock images.

Adobe this spring will release a similar \$895 Adobe Photoshop 2.5 for Windows. Versions for Silicon Graphics Inc. and Sun Microsystems Inc. workstations are due later this year.

Adobe Systems Inc. is at 1585 Charleston Road, P.O. Box 7900, Mountain View, Calif. 94039. Phone (415) 961-4400. □

Edo externals track images in 4D

By Kirsten L. Parkinson

Canton, Mass. — Edo Communications now is shipping ImageTracker, a package of externals that let 4th Dimension users create and customize image databases quickly.

ImageTracker 1.0.7, priced at \$199, includes externals for storing, searching, viewing and pasting image files in 4th Dimension, ACI US Inc.'s \$895 relational database program.

ImageTracker supports PICT, Encapsulated PostScript and eight-bit gray-scale TIFF files. Once an image has been imported with ImageTracker, users can view it as a thumbnail or in a full-size view that can be copied and pasted into a document.

The externals also let users assign unlimited keywords to an image for searching and accessing. With a built-in Clients feature, users can link images to a particular person, company or project. For example, graphic designers could store information about the images in a

brochure in a single place for easy access.

Future upgrades will add support for color TIFF and Twain, an application programming interface standard that will let users control compatible scanners from within ImageTracker, the company said.

ACI Partners receive a 25 percent discount off the retail price of ImageTracker.

Edo Communications is at 168 Neponset St., Suite 3, Canton, Mass. 02021-2910. Phone (617) 821-6324. □



ImageTracker is a 4th Dimension external that lets users catalog imported images by keyword, then view and link them to particular clients. This imported photo is from ATG's ClipTime Volume II American Media CD-ROM.

RasterOps deals 24STV card to fit in slot of new Centris 610

By Neil McManus

Santa Clara, Calif. — RasterOps Corp. is preparing a version of its 24STV videographics board for Apple's new Centris 610.

Due in April for \$999, the board will conform to the new 7-inch NuBus form factor of the Centris 610. Although the 7-inch card will work with all other NuBus Macs, RasterOps will continue to offer its current 12-inch version of the 24STV.

The 24STV delivers 24-bit-color graphics at 640-by-480-pixel resolution to displays as large as 14 inches.

The board captures video from S-video and composite sources, such as VCRs, televisions and camcorders, and displays live video in a resizable window. It supports NTSC, PAL (European) and

SECAM (French) video signals.

The RasterOps card comes with MediaGrabber 2.1 software, which saves captured images in a variety of formats, including QuickTime movie, PICS, PICT, compressed PICT and TIFF.

Users can expand the 24STV with daughterboards, such as the RasterOps PhotoPro, a \$999 RISC-based card that speeds Adobe Photoshop filters and JPEG (Joint Photographic Experts Group) compression and decompression. RasterOps' \$1,999 MoviePak daughtercard for QuickTime acceleration will work with the board but won't fit in the Centris 610, the company said.

RasterOps Corp. is at 2500 Walsh Ave., Santa Clara, Calif. 95051. Phone (408) 562-4200; fax (408) 562-4065. □

Clip-art CD-ROM collections put new spin on multimedia productions

By Kirsten L. Parkinson

San Francisco — A new crop of CD-ROMs will let multimedia producers round out their presentations with photos, textures, clip art, animations and sounds.

► **Aris Entertainment** this month will roll out WorldView for QuickTime 1.5, a \$39.95 collection of film clips and photos of the Earth and other planets as well as the space shuttle.

The disc will comprise 25 QuickTime animations and 100 eight- and 24-bit-color PICT images. It also will offer 100 musical clips based on astronomical themes. The images and sounds can be used royalty-free, provided that the artist is identified.

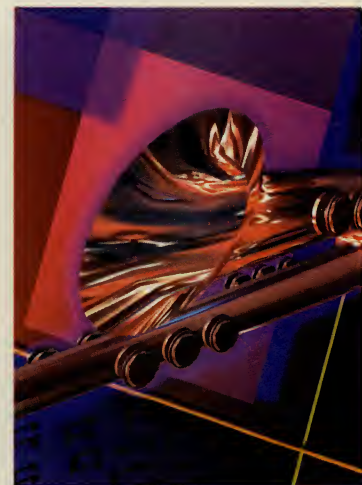
► **East•West Communications** last month released volumes I and II of ProGraphix, a collection of 3-D images and backgrounds.

The images are saved as eight- and 24-bit-color PICT and 24-bit-color TIFF documents in a variety of resolutions. They include spheres, space, computers, music, globes, and metallic letters and words. Each disc also ships with 20 PICS and 20 animations from Macromedia Inc.'s MacroMind Director that cover the same subjects.

Each volume costs \$495; a set of both discs is \$895.

► **Audio Visual Group** recently shipped The Multiple Media Tour, a \$379 CD-ROM of backgrounds, sounds and other multimedia effects.

The disc includes 150 eight-bit-color PICT background photos and designs; 110 eight-bit-color PICT



Each volume of ProGraphix from East•West Communications includes more than 300 computer-generated 3-D images, such as this saxophone.

textures, including wood, metal, stone and fabric; sounds; tiles; clip art; animations; and QuickTime movies.

The Multiple Media Tour is available for \$199 through March 31.

Aris Entertainment is at 4444 Via Marina, Suite 811, Marina del Rey, Calif. 90292. Phone (310) 821-0234; fax (310) 821-6463.

East•West Communications is at 1631 Woods Drive, Los Angeles, Calif. 90069. Phone (213) 848-3436 or (800) 833-8339; fax (213) 848-3034.

Audio Visual Group is at 398 Columbus Ave., Suite 355, Boston, Mass. 02116-6008. Phone (617) 381-1609 or (800) 676-7284; fax (617) 381-1609. □

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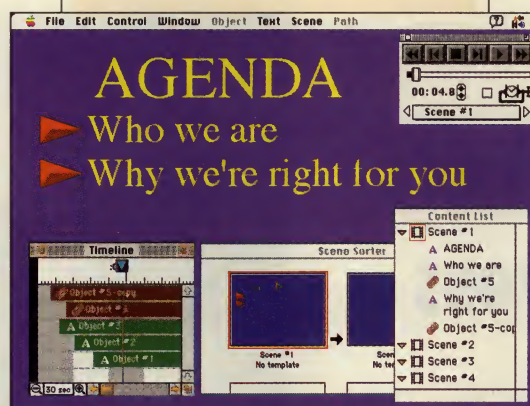
Graphic elements fly on and off the screen. Text enters where and when it's needed to make a point. Scenes change smoothly with colorful, creative transitions. Charts generated from spreadsheets and hot-linked into Action! come to life with motion and animated effects. And QuickTime®, Video for Windows™ or Indeo™ movies communicate ideas clearly and powerfully.

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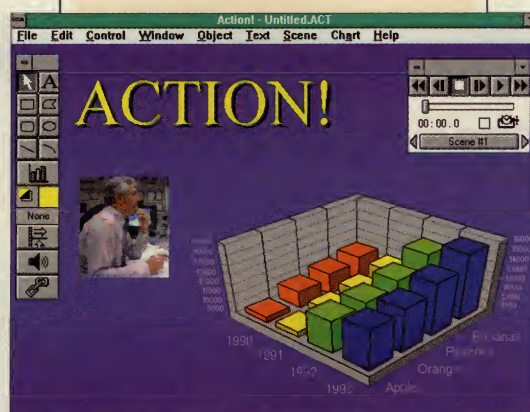


Action's Content List, Scene Sorter and drawing tools are familiar to anyone who's ever used slide-based presentation programs, while the powerful multimedia tools, including the Timeline and Control Panel, are even easier to master.

“Action! may do for the multimedia PC what Pagemaker did for desktop publishing. (It's) a must for anyone who needs to throw together presentations with minimum effort and maximum punch.”
Computer Shopper, January 1992

“Of the multimedia-integration programs now available, Action! gives you the richest selection of features and is one of the easiest to master.”
MacWorld, February 1993

“(Action's) greatest strength is that it allows regular businesspeople to apply multimedia as they see fit.”
PC/Computing, December 1991



Action! 2.5 for Windows offers many exciting new features, including data-driven motion charts with DDE links, as well as support for the newest digital video formats.

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or large screen monitor.

Of course, you can also print to paper when you need to produce a hard copy leave-behind.

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Case Study

JCH Group pushes the limits of Mac-powered pre-press

New York operation is using the Mac to redefine high-end electronic pre-press.

By Don Steinberg

When Letraset needed a pre-press service bureau to produce its new Phototone image catalog, it chose the JCH Group Ltd., a Macintosh-based company known for its success in high-end color publishing. Since the book contains nearly 600 high-resolution images, using Macintoshes and PostScript rather than traditional high-end production methods saved Letraset countless hours and thousands of dollars.

Equally important, the separations generated by JCH's Mac-based system rivaled results from conventional methods, said Alex Kalifatides, product manager of Letraset.

PostScript conversion. Seven years ago, Paul Beyer was programming financial databases on PCs at a Manhattan design firm — and daydreaming about more creative ways he might put desktop computers to work. He bought a Mac and a LaserWriter but said he "hated the Mac" for its lack of programmability.

Then Beyer discovered PostScript. "I bought the Adobe [PostScript] book in 1986, and my brain caught on fire," Beyer said.

Today, thanks to PostScript image editing on the desktop,

Beyer runs JCH Color, the \$10 million color operation of the JCH Group, a New York service bureau that is helping to revolutionize pre-press technology — and which may ultimately help drive traditional pre-press shops out of existence.

Leader of the Mac. JCH Color is one of a handful of all-electronic color pre-press bureaus in the country, providing a link between clients' designs and final printing. The color unit does virtually all its pre-press work on Macintosh systems connected to a variety of high-end input and output devices. Using software such as Adobe Photoshop and Fractal Design Corp.'s ColorStudio to correct and manipulate high-resolution color photos, JCH produces top-quality magazine covers, consumer ads, posters and art books for a prestigious list of publishers, ad agencies and manufacturers.

A walk through JCH's cluttered Lower East Side offices reveals some heavy-duty machinery. In the color department, four Macintosh IIx machines and a Quadra 950 run day and night in three shifts. Each IIx is loaded with a 1.2-Gbyte hard drive and 128 Mbytes of RAM, and each sports a



Paul Beyer (left), vice president of JCH Group, has helped to expand the frontiers of Mac pre-press. The image below was done using ColorStudio 1.5 to illustrate high-quality halftone screening on the Mac for an international conference on electronic design. It was printed using a 300-line screen to an Agfa SelectSet imagesetter.

DANUTA OTFINOWSKI



19-inch calibrated monitor from Radius Inc. or RasterOps Corp.

The Macs are connected to two servers via an Ethernet LAN. A 386-based Novell Inc. server is dedicated to the company's telegraphics unit, through which clients can exchange files with

JCH by modem. Image processing and color separations are handled by an Agfa Cobra RIP (raster image processor). The Cobra, which runs on a Sun SPARC-station with a 3.5-Gbyte hard disk, queues PostScript jobs for rasteri-

See JCH, Page 38

SCREEN TEST

Mac artist captures JCH mission to educate graphic designers

New York — For a marketing brochure of its services, the JCH Group hired Takaaki Matsumoto to design an example of its capabilities. JCH then produced the brochure on the Mac without conventional mechanicals or film to demonstrate the high-end desktop pre-press process.

Matsumoto, of M Plus M Inc. here, illustrated spreads on typography, black-and-white, color and pre-press technologies, and included a chart explaining the evolution from traditional to electronic production. The steps taken in creating the brochure also are outlined in detail.

The brochure's purpose is to educate designers about current realistic production capabilities, Matsumoto said. "The technology is not yet accessible in the ways it is talked about, so this explains what is necessary to know about



the need to link to high-end equipment."

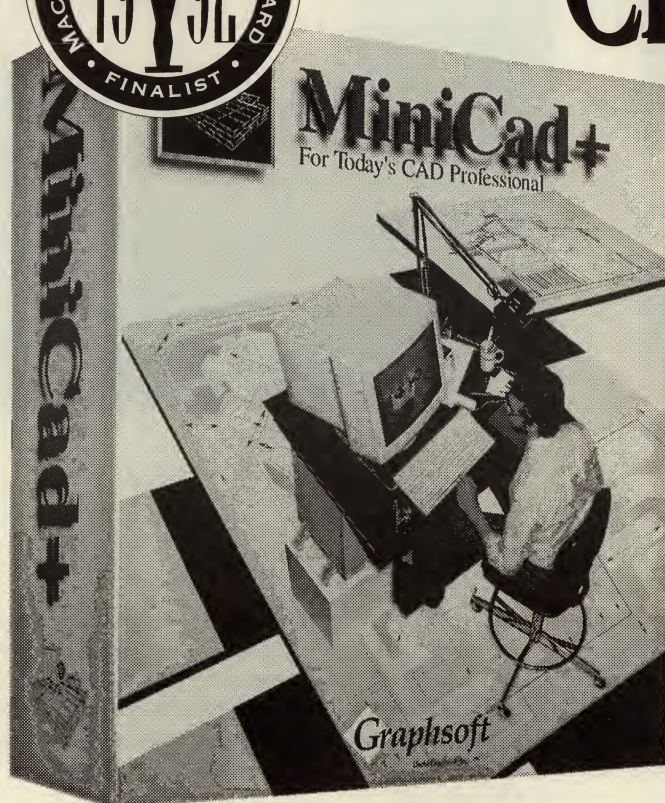
JCH scanned the photographs and color-corrected them in Fractal Design Corp.'s ColorStudio and Adobe Photoshop. The company assembled

the Adobe Illustrator drawings and all other elements in QuarkXPress and previewed pages as QMS proofs. It reviewed final pages as AgfaProofs (Agfa's laminated film used for high-quality color proofing) and produced plate-ready film negatives on the Agfa SelectSet 5000 imagesetter.

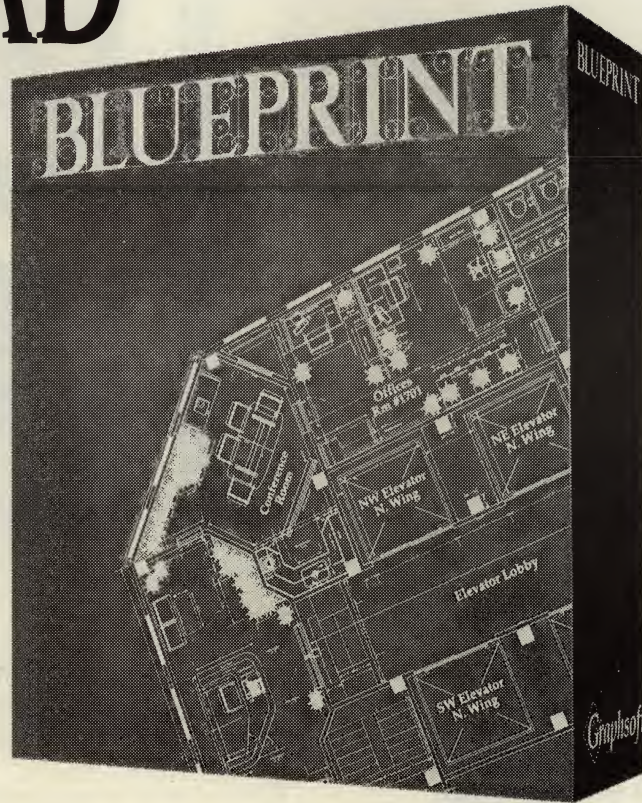
"Future technologies will advance so the designer will see the end product right away on the desktop. [He will see] exactly what he is doing as he designs," said Matsumoto, who is from Japan.

He was trained in design at the Art Center College of Design in Pasadena, Calif., and said that his sensibilities to quality and color have been influenced by his native culture. "But it is necessary for the designer to understand that the computer is not a design device — it is just a tool." — By Stuart Silverstone

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3D CAD:

none

Integrated Database/Spreadsheet:

none

Programmability:

none

- ☐ fillets
- ☐ editable fills
- ☐ beziers
- ☐ wall-join
- ☐ chamfers
- ☐ tolerancing
- ☐ 9 saved views
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- ☐ add & subtract surfaces
- ☐ pick-up and put-down attributes

- ☐ fillets
- ☐ editable fills
- ☐ beziers
- ☐ wall-join
- ☐ chamfers
- ☐ tolerancing
- ☐ unlimited saved views
- ☐ hatching
- ☐ on-line prompts
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- ☐ classes
- ☐ round wall caps
- ☐ edit inside groups

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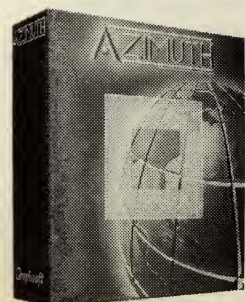
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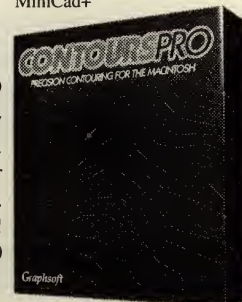
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Letraset's Phototone book of more than 500 texture and background images was created entirely on the Macintosh by the JCH Group. Users can copy or scan the images in the book and order 4-by-5-inch transparencies or 35mm slides of the images with full reproduction rights from Letraset. The company currently is developing a CD-ROM version of the book that will contain all of the images in low-resolution format.

JCH

From Page 36

zation on an Agfa Star RIP 400 multiplexer. Rasterized color separations are output around-the-clock from two Agfa SelectSet 5000 imagesetters.

JCH captures photos on a networked Optronics ColorGetter Plus drum scanner; additional scanning jobs are captured on a Crosfield 646 drum scanner located off-site and transported to the office on nine-track tape.

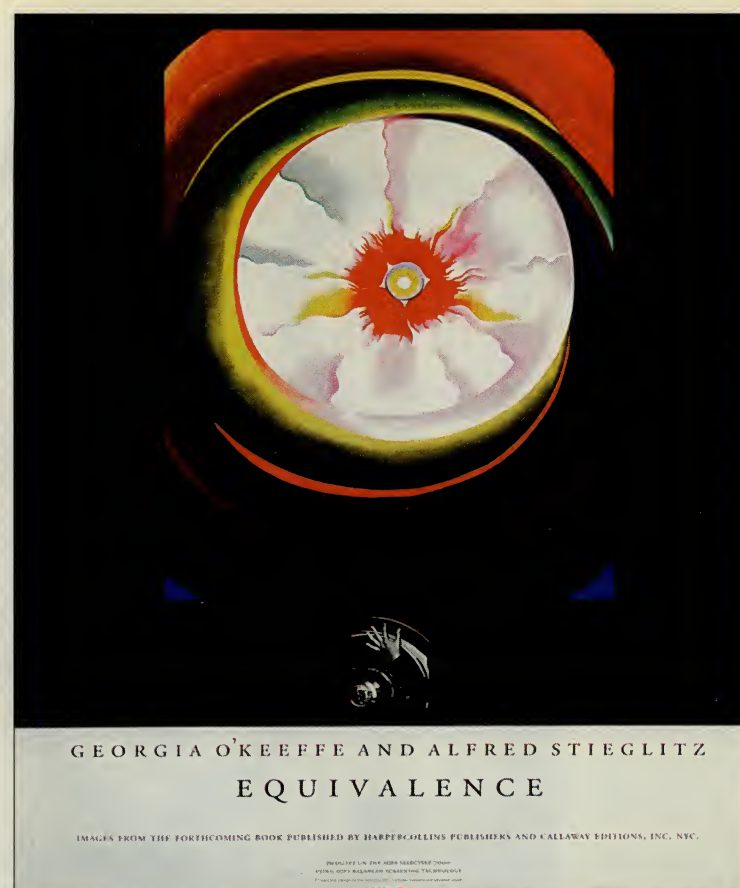
Putting the tools to work. Letraset's Phototone catalog, which JCH completed this fall, comprises 568 background images for use by designers in posters and advertising. Designers can browse the catalog — which includes 19 different

marble walls, for example — and order 4-by-5-inch transparencies or 35mm slides with full reproduction rights from Letraset for \$199 each.

Letraset also plans a CD-ROM containing 72-dpi versions of all the Phototone images, image search and browsing software, and screen fonts. No price has been set for the disc, which is slated for release in March.

JCH scanned the images as Desktop Color Separation files. The images were retouched and color-corrected in Photoshop and ColorStudio at a rate of 150 images per week. Final digital separations occupied 22 Gbytes of disk space. All images in the 175-page book were output in two days on the Select-Set 5000 imagesetters.

Beyer said the desktop environment let JCH work closely with the book's designer,



This poster was designed by JCH to promote Callaway Editions' "Two Lives" book, which juxtaposes the work of Georgia O'Keeffe and Alfred Stieglitz. The poster was produced on the Macintosh and printed on an Agfa SelectSet imagesetter in 11 color separations.

Blue Brick Designs of New York. Blue Brick also uses Photoshop, so the software served both as a design and production tool. For instance, when designers wanted to illustrate special effects that could be achieved with background images, they used Photoshop to rough them out. Working directly with Blue Brick's graphics files, JCH applied luminance masking and other techniques to achieve the effects specified by the designers, generating multiple low-resolution proofs for the designers to review.

Blue Brick creative director Chris Wise said such collaboration doesn't happen in traditional pre-press, where bureaus are merely executors of detailed instructions.

Impressive pre-press. Despite its innovative techniques, Beyer said, "to most of [JCH's] clients, it's immaterial that we use Macs." They just see that a job can be done less expensively than with a traditional pre-press system such as those by Scitex Corp. and Hell Graphic Systems Inc., he said.

According to Letraset's Kalifatides, who coordinated the Phototone project, although the quality of the finished product is comparable to using a Scitex system, that "would have cost me 10 times as much."

Besides the lower cost of PostScript, Macs and midrange imagesetters, Beyer said desktop tools are simply superior to traditional photo manipulation in such areas as retouching to eliminate artifacts.

According to Beyer, PostScript "is democratizing the [pre-press] process" by taking high-end capabilities out of the exclusive realm of costly proprietary machines. "Within three years, this business is going to be all PostScript," he said. By then, the PostScript book that originally ignited Beyer's imagination will be a decade old — and it may have a few new chapters thanks to an avid reader. □

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New Media STEVE ROSENTHAL

Broadcast quality for digital

Is a 640-by-480-pixel, 30-frame-per-second video signal the equivalent of "broadcast quality" television? According to the makers of a growing number of desktop video products, it is.

But if we look more closely, there are significant differences between this format and what normally goes out over the airwaves. Even if we put aside questions of color, sharpness and content, there are still big gaps between what broadcasters expect and what Macintosh desktop video products deliver.

The key standards broadcasters use are technical regulations from the Federal Communications Commission, which are based on proposals made by the National Television System Committee (NTSC), and the

Putting aside questions of color, sharpness and content, there are still big gaps between what broadcasters expect and what Mac desktop video products deliver.

related standard, RS-170A, recommended by the Electronic Industries Association. Neither says anything about digital video, so we have to convert everything to analog equivalents to make the comparison.

Looking at the vertical dimension of the image, a standard NTSC image displays 483 to 485 visible picture lines (depending on how they're counted). So 480 pixels won't quite fill the screen in the vertical direction.

On the other hand, 640 dots going across turns out to be more than NTSC can handle.

At first, it might seem quite the other way around. TV's 4-3 aspect ratio should give us about 644 vertically running lines across the width of the image. But the video world measures one vertical line as a black-white alternation. Therefore, we need a pair of pixels to create one vertical line as the TV beam sweeps horizontally across the image, so 644 lines would take 1,288 dots.

Unfortunately, fine detail requires high frequencies, and NTSC limits the maximum brightness frequency to 4.5 MHz. Within that bandwidth, the maximum number of lines we can show is closer to 234—equivalent to 465 pixels across an image. Inevitably, much of the detail in a 640-pixel line will be lost.

Similarly, the 30 fps used for most digital video is about 1 percent faster than the actual NTSC standard of 29.97 fps. Over one hour, that's a difference of about 36 seconds.

In practice, if a video signal is even close to NTSC/RS-170A values, every TV station

has the equipment needed to adjust the critical timing and level parameters to the FCC-required values.

But even professional equipment such as infinite-window time-base correctors and

processing amplifiers ("proc amps") cannot work miracles. The more changes they have to make, the more artifacts we're likely to see in the final signal.

That doesn't need to be the case. Every Macintosh video system ought to include a clearly labeled best digital approximation to true NTSC video. If desktop video and broadcast formats were closer, it would be simpler to move video from one to the other.

Until high-definition television arrives, however, there's little prospect the TV industry will adopt computer video standards. If we really want to make it easy for broadcasters to work with Mac video, it appears we'll have to work a lot harder at supporting theirs. □

Send tips and comments to Steve Rosenthal, c/o MacWEEK, 301 Howard St., 15th Floor, San Francisco, Calif. 94105; AppleLink: Steve.R; MCI: 114-8611.

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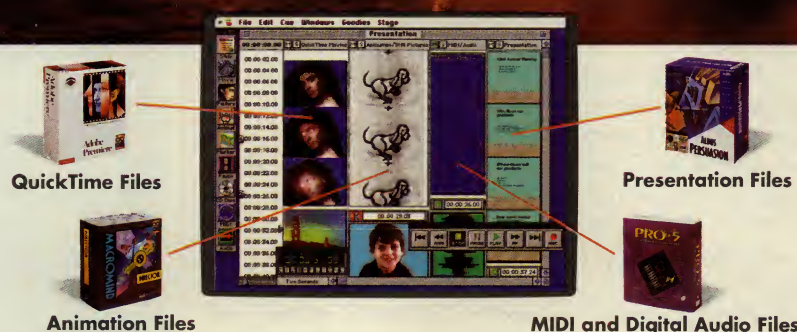
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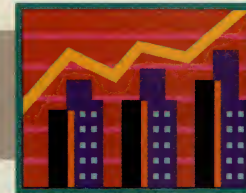
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Apple Japan: The secret of success

Key, company says, is its 'involvement'

By Andrew Gore

Tokyo — Japan is a country steeped in tradition, down to the ritual exchange of business cards. Yet with Macs representing 8 percent of all personal computers in use here — the largest share for any foreign computer maker — it is apparent the Japanese have developed a yen for an untraditional company.

Apple Pacific is Apple's fastest-growing division. Japan is the company's third-largest market, behind the United States and France. Company officials said Apple's sales in Japan during its first quarter ended Dec. 25, 1992, increased 57 percent from the previous quarter and they estimate the division will ship another 200,000 Macs by the end of fiscal 1993. If the company achieves that goal, Apple expects that its share of the Japanese personal computer market will reach 10 percent.

And though Apple's market share may fall far short of Tokyo-based NEC Corp.'s 53 percent, a recent

customer survey showed Apple was No. 1 in customer awareness in Japan.

To further illustrate Apple's popularity here, one has only to peruse the computer section of a book store in Tokyo's Shinjuku district. Roughly half the books are about the Mac, and five Japanese Mac magazines serve an installed base of 500,000 users. By comparison, there are only three major Mac-specific publications in the United States for about 5 million users.

According to Apple, the secret of its success in fiercely competitive Japan is that it does business as a Japanese company would.

For example, Apple stock is traded under Tokyo's Nikkei stock exchange. Apple Japan has Japanese management. And the division has

Apple Japan

- 8 percent of total PC market
- Installed Mac base over 500,000
- 200,000 Macs expected to ship this year
- 57 percent growth in Q4 1992, making it Apple's fastest-growing market
- 16 Apple Centers nationwide



tried to associate itself with the young and affluent in the country by sponsoring the Janet Jackson "Rhythm Nation" tour in 1990 and the Japanese Ladies' PGA Gold Tournament last year.

"It is very important in Japan to See Apple Japan, Page 42

Claris' first financial report a strong one

By Lisa Picarille

Santa Clara, Calif. — In a move to let customers know how it has been fairing, Claris Corp. released its first financial report in its six-year history, showing record sales and profits.

The company said revenues for its first quarter ended Dec. 25, 1992, increased 37 percent to \$38.8 million, up from \$28.4 for the same quarter last year. Net income jumped 98 percent, to \$8.1 million from \$4.1 million last year.

A Claris spokeswoman attributed the results to strong sales of its ClarisWorks integrated package and heavy demand for the Mac and

Windows versions of its FileMaker Pro database program.

ClarisWorks commands more than 60 percent of the Mac integrated market, according to Dataquest Inc., a San Jose, Calif.-based market research company.

Meanwhile, FileMaker Pro holds an even larger share — about 70 percent — in the Mac database market, according to International Data Corp., a Framingham, Mass., market research company.

"Claris and its board of directors felt it was important for customers to know how we're doing in terms of growth and profitability," said Claris spokesman Steve Ruddock. "We expect in 1993 to go from the 12th-largest software developer overall to among the top 10."

In addition to shipping a handful of new products during the first quarter of fiscal 1993, Claris announced Claris Clear Choice (CCC), a division that uses the company's marketing and distribution

Apple designates 19 ed resellers

By April Streeter

Cupertino, Calif. — Apple this month chose 19 lucky dealers to take part in its revamped education sales program.

The selection follows a three-month effort on Apple's part to downscale the program. Until now, it has involved about 400 representatives providing sales and consulting services to customers in the K-12 or higher-education markets, or both.

Under the new structure, Apple said, it will directly handle sales to higher education. On the K-12 level, each region's sites will be divided into "named" and "unnamed" schools. Apple will sell direct to "unnamed" schools; only the selected 19 resellers will be authorized to assign sales agents to the "named" K-12 sites.

What the plan means, said Barry Waitte, director of business opera- See Education, Page 42

New Apple Europe programs bolster support for developers

By Jon Swartz

Paris — With European unification as a backdrop, Apple Europe this winter is rolling out an ambitious new service and support program for its developers, value-added resellers and systems integrators in more than a dozen countries.

Apple Europe President Sören Olsson said that the program for the first time offers Europeans services equivalent to those available in the United States. Apple previously had offered varying services throughout Europe but not consistent support in every country, he said.

Under the new plan, Apple is offering a trio of programs.

► **APDA.** Like its U.S. counterpart, the European version of APDA provides Apple and third-party development tools and technical information.

► **The Apple Associates Pro-**

gram (AAP). In addition to APDA services, the Associates program offers product and upgrade information, AppleLink access, and discounts on Macs used for software and hardware development.

The program will cost about \$500 per year.

► **The Apple Partners Program.** Aimed at key third-party developers, the Partners program includes APDA and AAP services plus electronic-mail access to Apple Developer Technical Support engineers.

The program also provides access to third-party compatibility labs that Apple is establishing in several countries and advanced access to Apple products.

Enrollment in the Partners program will cost about \$1,500 per year.

Apple said it now has about 30,000 developers worldwide. □

StockWatch

02.17.93 CLOSE WEEKLY % CHANGE
Apple 53.88 -3.36

SOFTWARE DEVELOPERS		
Adobe	41.25	0.61
Aldus	16.50	-0.75
Caere	18.25	-17.05
CE Software	3.13	-13.79
Microsoft	80.25	-6.14
Novell	26.63	-8.19
Symantec	11.75	0.00

PERIPHERALS VENDORS		
CMS	2.88	0.00
HP	72.25	6.06
Mass Micro	0.47	-16.70
QMS	14.50	-3.33
Radius	5.00	-4.76
RasterOps	7.00	-9.68
Sigma	6.88	1.85
SuperMac	17.25	-12.66

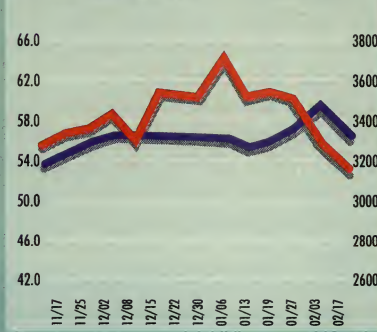
STORAGE		
Conner	19.75	-7.06
Maxtor	9.00	-5.26
Quantum	15.75	-3.08
Seagate	17.75	-3.40
SyQuest	15.00	-15.49

INDUSTRY INDICATORS		
DEC	42.63	-2.29
IBM	50.50	-3.12
Motorola	54.38	-2.68
Sun	33.25	-6.67
Dow Jones	3312.19	-2.94

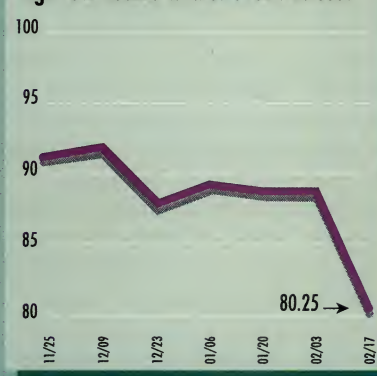
Compiled by Nordby International Inc.

High-tech stocks took a beating across the board last week. Microsoft Corp., which hit \$94 less than six weeks ago, slipped 6 percent to close last Wednesday at \$80.25, its lowest level in months. The slide came

Apple stock price 53.88 on 02/17/93
Dow Jones average 3312.19 on 02/17/93



High-tech decline catches even Microsoft



despite widespread speculation that the Federal Trade Commission is deeply divided over allegations of unfair trade practices on the part of the Redmond, Wash., company and may drop its investigation.

Claris' Q1 results

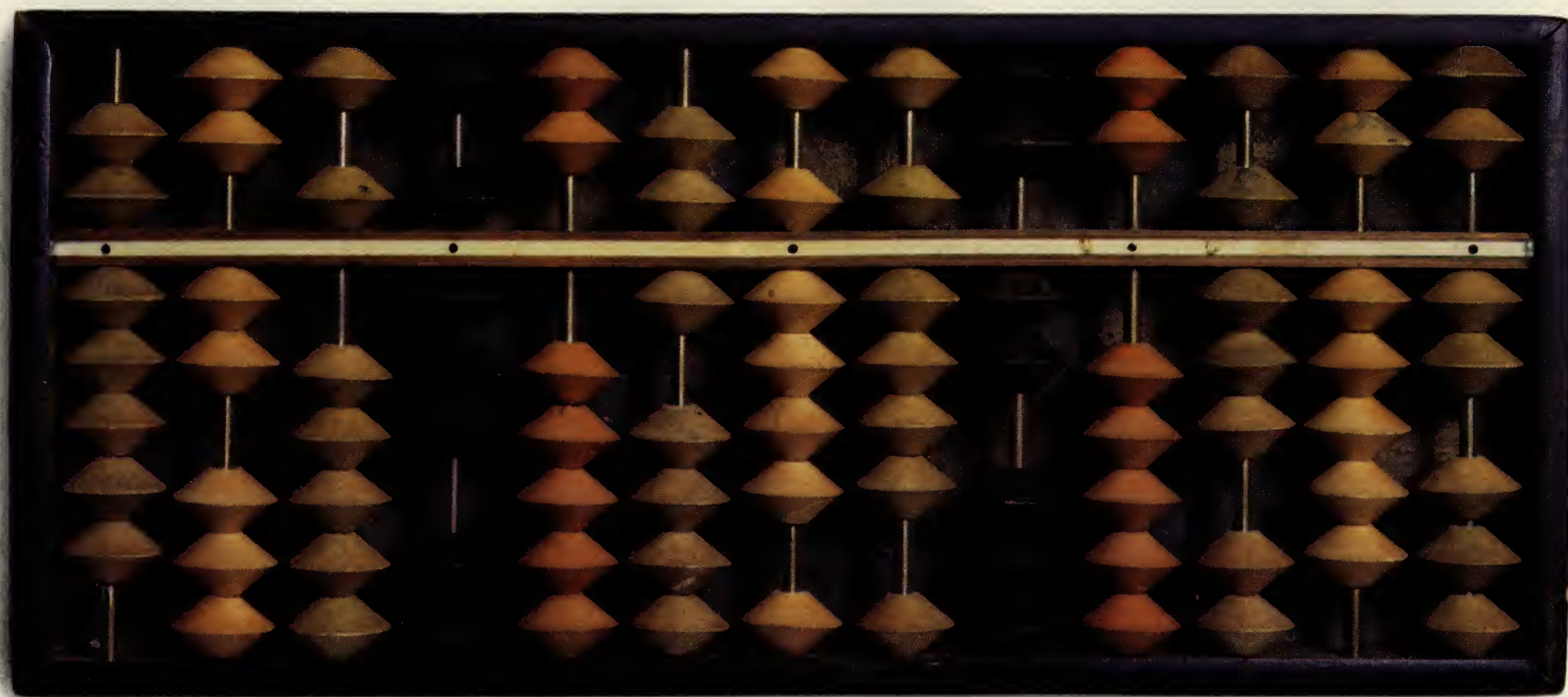
	1993	% INCREASE
Revenues	\$38.8 million	37
Net income	\$8.1 million	98

Source: Claris Corp.

See Claris, Page 42

See Education, Page 42

It's been centuries since working with numbers was this easy.



The abacus first appeared around 500 or 600 B.C. Some say it was invented by the Egyptians. Others think it was the ancient Chinese. But whoever it was, they had the right idea: create a simple, easy-to-use device for working with numbers, and people will be a lot more productive.

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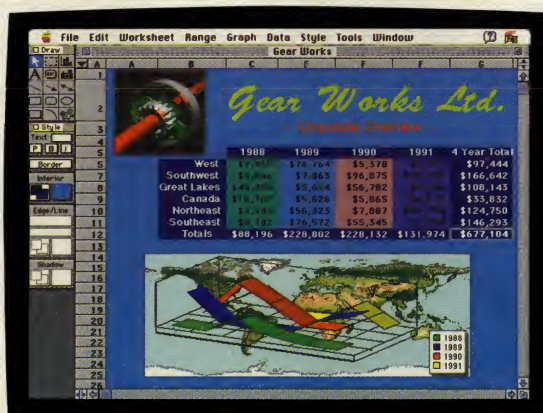
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Lotus 1-2-3 for Macintosh

Iomega restructures, trims work force

By Lisa Picarille

Roy, Utah — On the heels of a disappointing financial report, Iomega Corp. last week restructured its internal operations and reduced its work force by nearly 10 percent.

The company, known mainly for its Bernoulli removable-media drives, said it has eliminated 99 of the 1,150 positions on its staff; 12 of the employees have been offered other positions.

According to a statement, the new operating structure will give "bottom-line responsibility" to the company's Bernoulli, Tape and

Floptical product divisions.

Iomega last month reported that earnings for the fourth quarter, which ended Dec. 31, 1992, had plummeted to \$41,000 from \$4.3 million for the same period a year ago, while revenues dipped 5 percent to \$37.5 million. For the year, sales were up 2 percent to \$139.2 million, but earnings dropped 161 percent to \$4.7 million from \$12.3 million (see MacWEEK, Feb. 8).

In last week's statement, the company attributed its poor fourth-quarter showing and the layoffs to

costs associated with the development and launch of its new tape and floptical product lines and its latest Bernoulli design, the MultiDisk 150. Iomega also said its federal government business is below expectations.

"Their numbers have gone down, but it's not earth-shattering," said Katherine Hilton, an analyst with InfoCorp, a market research company in Santa Clara, Calif. "They are in the process of transitioning customers to the 150."

"Their new Tape 250 (not available for the Mac) overshot sales expectations," she said. "But the floptical has been a little slower in the industry in general to take off." □

Mirror Technologies reports big Q3 loss

Roseville, Minn. — Mirror Technologies Inc. last week posted a loss of \$2.2 million for the third quarter of its 1993 fiscal year and warned of more red ink to come.

Revenues for the quarter, which ended Dec. 31, 1992, dipped 24 percent to \$4.5 million. In the corresponding quarter last year Mirror lost \$270,000 on sales of \$5.6 million.

The Mac peripherals vendor

attributed most of the loss for its most recent quarter to inventory write-offs and to restructuring costs associated with the acquisition last November of Envisio Inc. of Minneapolis.

Mirror said that it expects to post a loss of about \$1 million for its fourth quarter, which ends March 31. In the last quarter of fiscal 1992, Mirror showed a profit of \$150,000 on sales of \$6.5 million. □

Apple Japan

From Page 40

have a relationship with the company, not just the product," said Frederick Bullock, manager of market development for Apple Pacific. "[The Japanese] think highly of Apple because we're involved with their lives."

A more practical reason may be the significant effort Apple has made to localize the Mac's interface and products. There are more than 800 KanjiTalk software products. By comparison, the localized version of Microsoft Corp.'s Windows, 3.1 J, isn't expected to ship until May.

"We're investigating the marketplace and developing relationships,"

said Kyle Mashima, vice president of product development for Objective Software Inc. of Redwood City, Calif. "Because of the number of units Apple is moving here, though, we think this could be at least 10 percent of our business someday."

Satjiv Chahil, vice president of Apple Pacific marketing, said, "The prevailing wisdom is that you'll never be able to understand the market, so just hire an exclusive distributor and let them take care of it." He added that Apple's nontraditional approach has been successful in Japan.

"But we decided that to succeed here, we should do it ourselves, make our own mistakes but also our own successes," Chahil said. □

Education

From Page 40

tions for Apple USA's K-12 education division, is "we've hired a sales force and our largest, most active strategic accounts will get the most resources." Apple will back up the reseller's efforts, he said, with "a massive telesales and telemarketing effort, which we didn't have before."

The list of dealers that received contracts includes Computer Plus Inc. of Sunnyvale, Calif.; Learning Technology Group Inc. of Rochester, N.Y.; and National Data Products Inc. of Clearwater, Fla.

According to Waitte, the companies were chosen on the basis of size and ability to apply their broader resources to the larger territories that the new program includes.

Apple said the biggest boon for education customers will be the ability to choose whether to get follow-up support and service from a sales representative, from Apple itself or from any third party. Under the previous program, support was included in the schools' contracts with their sales agent. □

Claris

From Page 40

clout to publish applications from small developers (see MacWEEK, Oct. 26, 1992). Claris officials expect 1993 revenues from CCC to account for less than \$10 million but said the division will play a "significant part in the [company's] business" over the next few years.

Resolve, Claris' Mac spreadsheet, may not be a big part of the company's future revenues. According to sources, Claris has stopped developing future versions of Resolve. Claris declined to comment. Resolve remains second in Mac spreadsheet market share, far behind Microsoft Excel 4.0, which commands about 70 percent of the market, according to Claris. □

Business

B R I E F S



SuperMac to offer stock

Sunnyvale, Calif. — SuperMac Technology Inc. last week filed a registration statement with the Securities and Exchange Commission to offer 1 million additional shares of common stock. The company's stock has been trading around \$17.50 per share, making the offering worth about \$17.5 million.

The monitor and graphics-card maker plans to use net proceeds for general corporate purposes and working capital, according to James Heisch, chief financial officer.

Lotus acquires client-server consulting company

Cambridge, Mass. — Lotus Development Corp.'s Consulting Services Group this month acquired Vanguard Business Solutions Inc., a client-server consulting company. Terms of the deal were not disclosed.

Vanguard, based in San Francisco, specializes in workflow automation, SQL database design and front-end development tools. It is expected to complement the services CSG offers to corporations in workflow analysis and business-systems development.

Exabyte plans two acquisitions

Boulder, Colo. — Exabyte Corp., a company built around 8mm tape-backup technology, this month announced planned acquisitions that will add more tape formats to its expanding product line.

The company, based here, said it has signed separate letters of intent to acquire Tallgrass Technologies Corp. and the Mass Storage division of Everex Systems Inc.

Exabyte said it will pay Everex, a Fremont, Calif., company now under Chapter 11 bankruptcy protection, \$5.5 million in cash for its storage division, which manufactures DC-2000-format quarter-inch tape drives.

Tallgrass, based in Lenexa, Kan., markets 8mm, 4mm and quarter-inch tape drives and stackers through retail channels. Exabyte said it will pay \$1.5 million in cash for the company, which will continue to operate under its own name as a wholly owned subsidiary.

In an earlier diversification move, Exabyte last fall acquired R-Byte Inc., a manufacturer of 4mm digital audio tape drives.

Conner lays off 100 employees

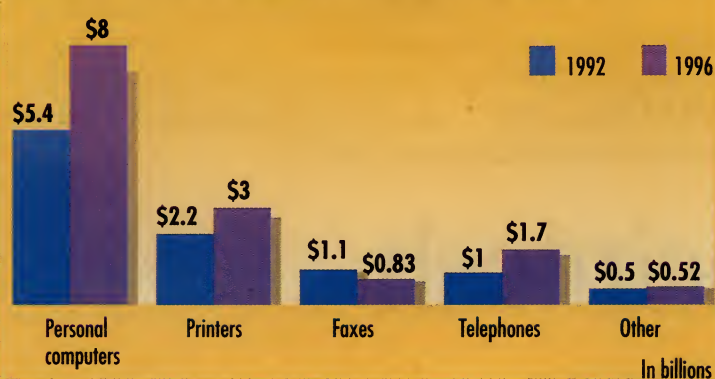
San Jose, Calif. — Conner Peripherals Inc. this month said it has laid off 100 employees.

A spokesman for the drive maker, based here, said the cuts, which amount to less than 1 percent of Connor's worldwide work force, eliminated redundant job positions in the wake of last month's acquisition of Archive Corp., a Costa Mesa, Calif., developer of tape drives.

MacWEEK index

SMALL-OFFICE MARKET GROWS

The so-called SOHO market, comprised of small offices with less than 10 employees and home-based businesses, is expected to increase its purchase of technology equipment 28 percent, from \$10.2 billion in 1992 to \$14.1 billion in 1996.



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EDITORIAL

Enabling Mac managers

Apple's "system enabler" scheme is turning into a new headache for Mac managers — and for no good reason.

When the company introduced enablers with System 7.1, the idea seemed simple yet compelling. By putting the system resources needed to accommodate the peculiarities of each new Mac model into a separate file, Apple would escape the burden of having to update the system as a whole every time it extended its hardware line. In turn, administrators installing new models no longer would have to choose between upgrading the software on all existing Macs or supporting a multitude of system versions.

The idea still makes sense; it's the implementation that's causing problems.

First, Apple has saddled the plan with a naming and numbering scheme that seems almost designed to bewilder. Some of the names, such as System Enabler 040 for the Quadra 800 and Centris 610 and 650, make sense (leaving aside reports that Quadra 950s won't start up if the file is installed).

But who outside of Cupertino would guess that the appropriate file for the new Color Classic is System Enabler 401, Version 1.0.4, while the LC III requires System Enabler 003? Why can't these files carry names that identify their function — something straightforward like "Color Classic Enabler"?

Worse yet, the enabler plan is making it hard for managers and third-party utility developers to build floppies that start up any Mac in case of problems with the internal hard drive. Apple should make it a high priority to come up with a universal enabler small enough to fit, along with a bare-bones system, on a high-density disk.

To Apple executives worried about new markets, grand alliances and 21st century technologies, file names and emergency disks are no doubt trivial issues. But for managers in the trenches of corporate computing, Apple's approach to such mundane matters may mean hours of staff time saved or wasted over the course of a month.

And that, in the end, is what the Mac advantage is supposed to be all about. □

Commentary

NeXT's next step: Software path won't be quick fix

Steve Jobs just called it quits in the hardware business, choosing instead to focus on becoming, in his words, the Avis of system software, with "you know who" being Hertz.

It would be premature to count Jobs out after this unpleasantness. We are dealing with a master of persuasion. And there is evidence that this master, freed from his beloved black cube, is eager to play the next round.

But, for all the talk of sharper focus, lighter investment and hardware divestment, NeXT Computer Inc. faces many obstacles on its new course.

NeXT victim. This latest turn of events might cast doubt on NeXT's technical and business acumen. Was it a case of good software soiled by bad hardware, or were there problems with NeXTstep as well?

The easy answer is none of the above: NeXT lost the hardware battle because the marketplace seeks the low ground, both price-wise and in keeping with safety in numbers. Therefore, get out of the hard-

ware business, call Sun Microsystems Inc., Hewlett-Packard Co. and Apple dinosaurs, and announce impending success for your New Age 486-ported operating system.

The strategy requires a sharper focus for NeXTstep: custom development of mission-critical networked applications. This skillfully positions NeXT away from the big general-purpose players such as Windows NT, Solaris or Unix. In fact, this is the area where NeXT has encountered some success with information-systems departments anxious to develop applications but unwilling to face the challenges associated with hard-core Mac or Windows applications programming.

It looks good: Play on your strengths, exploit the IBM PC clone momentum instead of fighting it, and stay away from the big guys.

Good Jobs. There are a few problems, though. First, this is the same strategy, sans the Motorola-based hardware, announced more than a year ago. NeXT was fond of saying that it was the future of object-oriented programming and that it was delivering what the others could only show on foils.

But the 486 version of NeXTstep still hasn't shipped and in the interim Microsoft Corp. has started to play that familiar refrain: "It's irrelevant, and we'll have it soon."

Another problem is what's needed to run NeXTstep 486. This software loves hardware and will need some of the fastest, most expen-

sive hardware PC makers have to offer. However, if NeXT manages to ship the 486 version of NeXTstep, the company might see some interesting opportunities ahead.

Take Novell Inc. It acquired AT&T Co.'s Unix Systems Labs and made investments that show its willingness to take on Microsoft. Novell and NeXT could pool resources.

Along similar lines, now that NeXT no longer competes with IBM Corp. on hardware, it might be time to dust off that circa-1988 \$10 million NeXTstep license deal and see if IBM can actually sell the software.

An even more sacrilegious thought: Imagine Jobs calling Messrs Sculley and Cannavino and offering NeXTstep as an alternative to Pink. Just in case. Freed from the responsibility of selling boxes (transferred to Canon Inc. after it invested an estimated \$220 million in NeXT), almost anything is possible with the newly emancipated Mr. Jobs.

Calling Steve resourceful and persuasive is probably like calling Houdini agile. All of us who are in his debt hope he'll escape the water trap one more time — assuming he realizes there is a difference between a magic show and the computer business. □



JEAN-LOUIS GASSÉE

LETTERS



Brainerd decries 'negativity,' points to Aldus' progress

The story "Aldus profits drop to lowest ever" (MacWEEK, Feb. 8) about Aldus Corp.'s 1992 year-end financial results raised concerns at our company. The negative tone of the story, combined with several inaccuracies it contained, might be cause for alarm among our customers and industry partners. We would like to take this opportunity to respond:

▶ The subhead "Executives continue to head for the exits" implied that Aldus has had recent executive turnover. In reality, our last executive resignation occurred nine months ago. Since then we have built a strong and talented executive team, which was recently completed with the addition of Ken Grunzweig, a former Lotus Development Corp. vice president, who joins us this month to head worldwide marketing.

▶ The story incorrectly stated that Aldus' fourth-quarter 1992 revenue increase was achieved "chiefly because of strong demand for its Fetch image-retrieval database product." While we were pleased with the demand for Aldus Fetch, its sales were not the chief reason for the increase in revenues. Stronger sales among the Aldus product family, particularly FreeHand, Persuasion and PageMaker, contributed to the increase.

▶ The story quoted sources saying that Aldus "may sell its consumer division" to "generate cash." This is also inaccurate. We have no intention of selling the Aldus Consumer Division, nor do we need to generate cash. At the close of 1992, our balance sheet reflected cash and equivalent reserves of \$71 million.

▶ The story inaccurately characterized the roles and positions of some midlevel managers who have left Aldus in the past year. Referring to some of these managers as "the developer of the kanji version of PageMaker," the "technical lead for PageMaker 6.0" and "the head of outside sales" is inaccurate.

Most disturbing, however, was the overall negative tone of the story. As was the case with many software companies, Aldus did encounter a difficult period in the middle of 1992. Since then, however, the company has made significant strides. The third and fourth quarters of 1992 showed successive improvement in revenue and earnings. Our fourth-quarter revenues were the best in company history. New additions to our senior management team bring years of computer industry experience from companies such as IBM Corp., Digital Equipment Corp. and now Lotus. We have refocused our strategic emphasis on markets where we have a competitive advantage and have already responded with new products such as IntelliDraw for the consumer market, and our professional pre-press products, PressWise and TrapWise, for the professional graphics market.

Perhaps most important, we have restaked

our claim to leadership in the desktop publishing market. PageMaker 5.0 has one goal: to be the very best page-layout software program for publishing professionals. Judging from the overwhelmingly positive reactions to the products worldwide, we are meeting that goal.

We look forward to 1993, which promises to bring us many new opportunities. We are absolutely committed — with a new aggressiveness throughout the company — to capitalizing on each one.

*Paul Brainerd, president
Aldus Corp., Seattle*

Aldus track record leaves developer permanently leery

The story about Aldus Corp. (MacWEEK, Feb. 8) finally brought to readers' attention the sad state of Aldus. It's just another case of a company that made its mark by being fortunate enough to enjoy an initial market monopoly but quickly forgot its customers and followed it up with a streak of poor management decisions that have doubled sales and halved profits.

PageMaker was the only desktop publishing application on the market when it was released. Aldus rested on its laurels, then discovered that as soon as some good old American competition invaded its dreamland that it couldn't compete. It has been playing catch-up ever since.

The sidebar incorrectly stated, however, that SuperCard was one of its major Mac products. I'm a developer who hasn't seen SuperCard in an ad or at a trade show in more than two years, has had his SuperCard developer support contract "nonrenewed" and has been told by Aldus representatives that SuperCard will never again be updated.

This treatment leads me and many other consultants to steer our Fortune 500 clients away from any Aldus product for fear that it also will be abandoned, resulting in the complete loss of their software investment.

The lackluster performance and poor management decisions have been recognized by Aldus executives who have fled, shareholders who are litigating, employees who are laid off, and Wall Street analysts who have watched the stock value steadily decline and earnings decrease 70 percent in the past year.

The Aldus response is to overpay management talent from IBM Corp., Digital Equipment Corp. and Lotus Development Corp., all corporations with proven experience in eroding shareholder value, shrinking sales and declining markets.

*Bryan Menell
Exact Systems Inc., St. Paul, Minn.*

Send letters to MacWEEK, 301 Howard St., 15th Floor, San Francisco, Calif. 94105. MCI 323-1203; Internet, letters@macweek.ziff.com; fax (415) 243-3650. Include your name, address and phone number. Letters should not exceed 300 words. We reserve the right to edit for clarity and length.

The Mac Manager

Yes, you too can become a genuine Mac manager



DON CRABB

Each week I write about successful Mac managers, about strategies to help them in their jobs, about new products and solutions, about strategies Apple should take to better the Mac manager's life. But as Dan Henderson, a would-be Mac manager, asked me recently, "How do you get hired as a Mac manager in the first place?"

I think that's a good question and one that even current Mac managers can reflect upon while contemplating how to make their own careers more satisfying.

Help wanted: Mac manager. It would be great if you could turn to your local paper, skip past the sports scores and lotto numbers, and go to the classifieds for Mac manager ads. But with the possible exception of the San Jose Mercury News, you just won't find such ads in most local papers and precious few in national papers such as the Wall Street Journal Employment Weekly.

Instead, you have to look beyond the obvious to postings for network administrators, microcomputer specialists and information-systems professionals. If you read many of these ads closely, you'll find that what the employer really wants is experience managing other professionals using Macs and Mac networks. You also might find ads for downsizing professionals or enterprisewide computing managers that are really coded entries for Mac managers.

Now for something completely different. But that basic advice will get you zilch if you don't know what Mac managers really do, how you can gain those skills yourself, and how many of us got to where we are today.

If you ask enough of us who have been around managing Mac users since the

beginning, you will find that we often got our jobs because we had key

"qualifications": We were at the right place at the right time, and we started helping other Mac users get their jobs done.

Eventually, a boss type saw what we were doing, and we pitched them on the idea that this Mac management should be our only job.

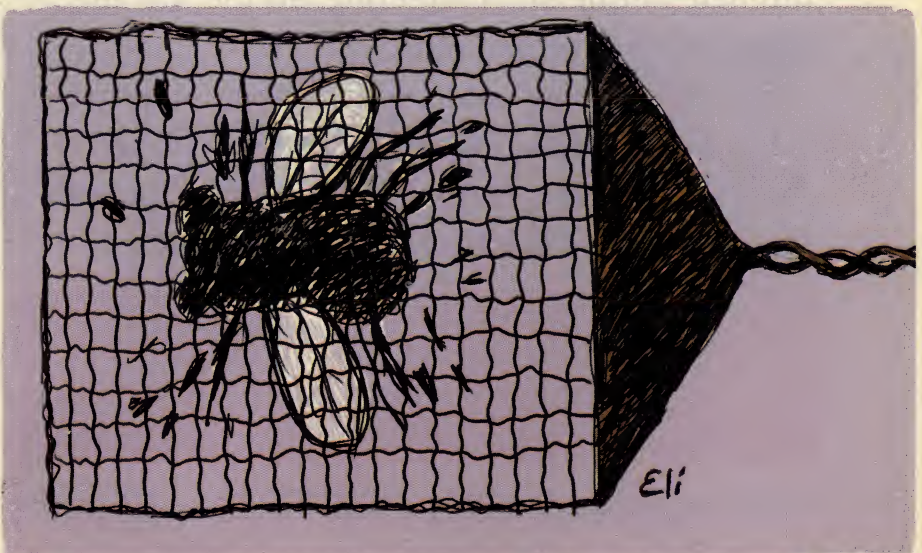
This strategy still works, but you have to be willing to invest time as a volunteer Mac manager over and above what you are paid to do. If you attempt this strategy, you've got to be simultaneously patient and able to spend a fair amount of time increasing your Mac knowledge. Then you have to know exactly when to ask your boss the big question.

If you aren't in a company where this will work, you've got to move to one where it will. This may mean you take a job you don't want at a company where you eventually want to become a Mac manager.

In the meantime, you can still work to increase your Mac expertise. Join a Mac user group and start participating actively. Acquire and absorb some of the classic Mac books. Subscribe and devour excellent Mac journals such as Paul Kent's Connections (for networking) and the Boston Computer Society's The Active Window.

Once you've gotten your foot in the right door, your knowledge level up, and you've started working like a Mac manager, then you've got to convince your bosses they should pay you for what they've been getting for free. That won't be easy.

In the coming months, I'd like to hear from people who are trying to get established as Mac managers. When I do, I'll post the updates here. □



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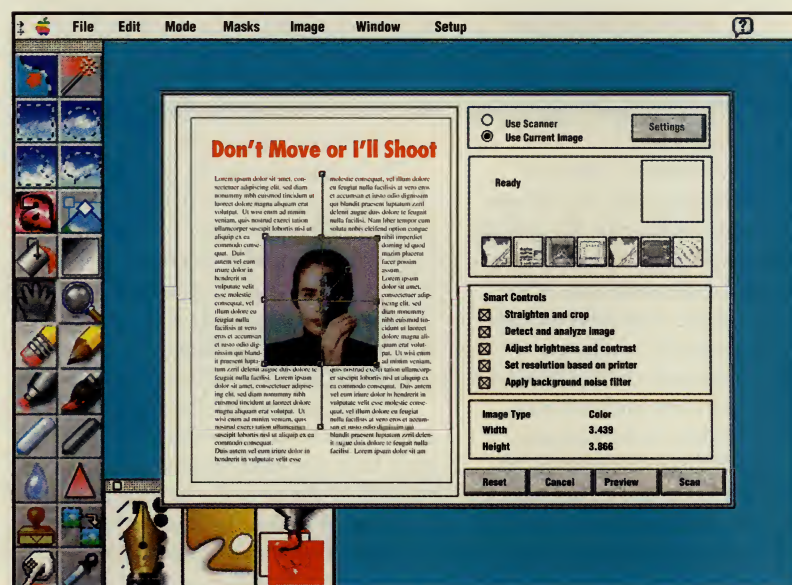
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Reviews

- ▶ Reviews Forum. See Page 50.
- ▶ Prograph. See Page 56.
- ▶ Expanded Book Toolkit. See Page 57.



CE Software boosts usability with QuicKeys 2.1.3 update

The new version eases macro creation and usage with Instant QuicKeys and QK Icons.

By Steve Michel

For years, CE Software Inc.'s QuicKeys macro program has been a nearly indispensable utility. CE recently released Version 2.1.3, which adds several useful enhancements to the \$149 program's feature set and simplified installation and configuration routines for new users.

QuicKeys started out as a keyboard macro program, but as the utility has evolved, CE has enhanced it beyond basic recording features. The program allows you to assign single keystrokes to a wide range of actions, such as choosing a menu item, clicking an icon or typing a string of text. Beyond these tasks, you can create sequences of QuicKeys macros that perform more complex actions. Shortcuts can be assigned to key combinations or to a QuicKeys menu, and they can be called up in an on-screen menu.

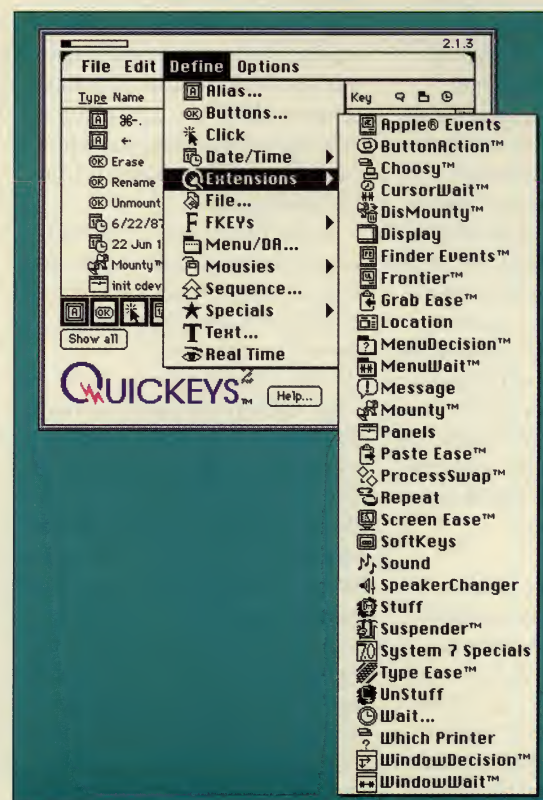
The program also features modules called Extensions, which add significantly to QuicKeys' power. These Extensions include simple modules that can change the sound level of your Mac as well as ones that mount file-server volumes and change printers.

The first release of 2.1 included an Extension that allowed you to send custom Apple events to other programs. QuicKeys also has an Extension for sending messages to UserLand Software Inc.'s Frontier,

and when AppleScript ships, CE will offer an Extension to support scripts in that environment.

Macro control center. Version 2.1.3 retains the basic interface that premiered with Version 2.0 of the utility. The main control-panel window displays the list of macros available in the current application. From this window you can create or edit macros and the key combinations that invoke them. A row of icons at the bottom of the window allows you to filter the displayed macros.

QuicKeys macros can be universal — available in all applications — or application-specific, and you can save and open sets of macros easily. You also can cut and paste macros between sets. CE's CEToolbox system extension places a QuicKeys hierarchical



Extensions modules are an excellent example of the way CE expands QuicKeys beyond simple keystroke recording and playback. The complete installation process adds 31 Extensions to QuicKeys, allowing you to perform tasks such as switching between open applications, determining cursor location and sending Apple events.

menu item on the Apple menu, and you can install specific macros onto this menu.

Paying the price. QuicKeys' richness does come with a price,

however. Although the program can really change the way you use your Mac and save you time, becoming proficient enough to create complex QuicKeys takes some

See QuicKeys, Page 51

PosterWorks is topping the billboard charts

Printing program outputs large formats

By Steve Hannaford

S. H. Pierce & Co.'s PosterWorks, now in Version 3.0, is a rare example of a niche Mac program that has grown in size, in features and in use over the years. The tool is in no way stripped down; in fact, the features are almost overwhelmingly extensive. However, the company is small — the president usually answers user calls — and the market is very specific.

PosterWorks' sole purpose is to prepare and output banners and signs that are larger than the standard output of laser printers. As such, the \$395 program has relatively little competition. At the low end, Broderbund Software Inc.'s BannerMania offers a fun but non-professional set of features. At the high end, the most notable competitor is Cactus from Cactus Inc. of Fairfield, N.J., which is tied to specific hardware configurations. There are other professional solu-

tions, but none is an off-the-shelf product. Depending on the quality of the color printer you use and the skill with which you correct the color output, PosterWorks competes surprisingly well with the specialized and traditional techniques of the signage industry.

A growing market. In 1989, when PosterWorks first appeared, you could print to any Apple Laser-

Writer, imagesetter or PostScript color printer, which at that point meant color thermal printers. Then, with scissors and glue, you could tile together a poster.

As the PostScript color printer market has matured, PosterWorks users now have a wealth of exciting new choices. These include photorealistic dye-sublimation printers, color copiers that use Electronics

See Poster, next page

RATINGS KEY

- ◆◆◆◆ Excellent
- ◆◆◆ Very good
- ◆◆ Good
- ◆ Fair
- ◆ Unsatisfactory

score card

QuicKeys

CE Software Inc.

Overall value ◆◆◆◆

Version tested: 2.1.3

List price: \$149*

QuicKeys is the premier macro program for the Macintosh, supported by leading-edge commitment from CE Software. Through QuicKeys Extensions and with support for Apple events and UserLand Software Inc.'s Frontier (and plans to support AppleScript), there is little that can't be done with the program. However, this power has a price, and creating complex macros is more difficult than we would like it to be. But CE is making the process easier by including Instant QuicKeys and QK Icons with the program and should make managers' lives easier with the QuicKeys RunTime package. Overall, for Mac users who want the ability to truly customize their machines, QuicKeys is a must-have.

Performance ◆◆◆◆

Features ◆◆◆◆

Ease of use ◆◆◆◆

Documentation/support ◆◆◆◆

* Upgrades, \$10 (free if purchased after Sept. 1, 1992).

score card

PosterWorks

S. H. Pierce & Co.

Overall value ◆◆◆◆

Version tested: 3.0

List price: \$395

PosterWorks 3.0 is a specialized product for creating professional signs, displays and other large-format output requiring continuity over more than one printed page. The program, which works with PostScript printers, both in black and white and in color, is suitable for regular commercial signage preparation as well as for occasional image blowups. While quite simple to use, it now has a wealth of specialized features that should satisfy most customer needs, even if they clutter the interface. Despite S. H. Pierce's small size as a company, PosterWorks is a very capable tool.

Performance ◆◆◆◆

Features ◆◆◆◆

Ease of use ◆◆◆◆

Documentation/support ◆◆◆◆

* Upgrade from Version 2.1, \$89.

Poster

From previous page

for Imaging Inc.'s Fiery controller, large-format inkjet printers from Iris Graphics Inc. and plotters from companies such as CalComp Inc. These and many other products are supported by PosterWorks. Any PostScript-compatible output device will work with PosterWorks.

The wealth of new devices eventually will replace signage and trade-show displays created photographically or by using silk-screen methods. As the market has grown, PosterWorks bureaus have sprung up across the country — a list of two dozen bureaus accompanies the product — and many of the signage and display-system companies have developed templates in conjunction with S. H. Pierce to help users prepare images and signs that fit into their specialized frames.

The basics. While PosterWorks offers an almost intimidating array of choices, it remains pretty simple in its basic functionality. Most large displays have to be tiled, that is, spread over distinct pages and assembled later. Based on the dimensions of your target output device, you are asked how many tiles you want to print. You can print a display up to 10,000 square feet in size.

When you have specified the dimensions, a map of the output tiles appears on the screen. You then import Encapsulated PostScript, color TIFF or Scitex Continuous Tone (CT) files as page elements and arrange and align them. You create text elements as PostScript type in programs such as Adobe Illustrator and Aldus FreeHand and import them as EPS files. You can resize, crop and move these elements on the poster until you are satisfied, and the program tiles the output according to your specifications. You then output the whole assembly to the target device. The program supports laser printers; imagesetters; and RGB (red, green, blue), CMY (cyan, magenta, yellow) and CMYK (cyan, magenta, yellow, black) color printers.

All of these operations have numerous variations. You can create custom, irregular-size tiles, which might be needed with certain display hardware. You may make

the header row, for example, different in size from other rows; you can include a white border area around the poster image; or you can overprint one element, such as text, over another. An extensive set of tools allows you to customize all this work to the requirements of the job. For devices that require four separate plates, you create EPS separations and download those files rather than printing directly from the application.

PosterWorks has very sophisticated color-correction, calibration and management tools that are available for more experienced users. You can configure many details, including gamma curve settings, UCR (undercolor removal), GCR (gray component replacement), gray balance, screen angles and dot shapes. While many of these features are intended for service bureau use, more-sophisticated users can benefit from these special capabilities as well.

Although it is hidden, one of the most powerful features of this package is its ability to handle a wide variety of output resolutions and line screens and to interpret correctly resized image files at these various output parameters. Vector-based PostScript elements, of course, are automatically resized. But bit-mapped image files are more complicated. The quality of the results are subject to three factors: the quality and resolution of the printer being used and the distance from the display that spectators normally stand — this is not like normal publications where viewers are just inches away. Users planning to print images in large format might be well-advised to run test pages in advance and mount them on a distant wall for previewing.

What's new. PosterWorks 3.0 adds a set of extended features to the basic functions of the earlier releases. A large library of templates is included for displays from a number of signage and trade-show display manufacturers. This gives the package wide applicability. It even includes templates for such particular formats as New York bus shelters and standard phone booth displays.

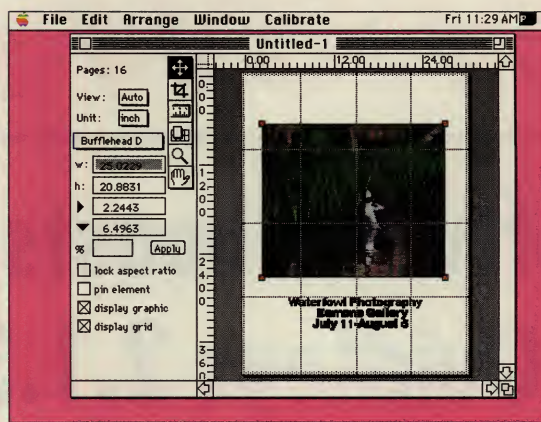
The new version can accept color-separation files created by Adobe Systems Inc.'s Separator and, as a result, it now can handle spot-color separations. The new version allows you to colorize gray-scale artwork internally by linking an EPS file to one of the color-separation planes. The program also now can place 32-bit CMYK TIFF files and can import DOS-created EPS files as well. For bit-mapped images, the program supports PostScript Level 2 interpolation, which allows for

more-realistic image enlargement.

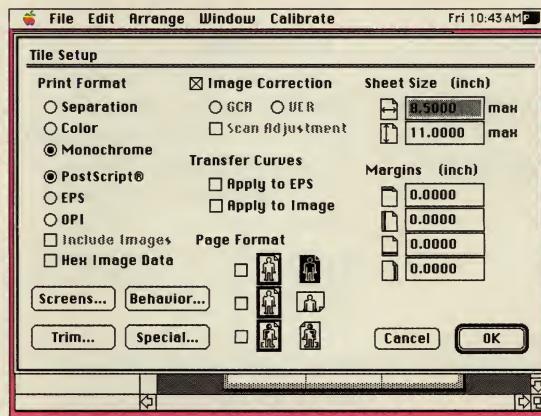
PosterWorks also offers extended features for alignment, font linking, format switching, scaling and margin overlap. Picture replacement is supported, so bureaus can send low-resolution scans to clients for design positioning without having to include large image files.

Interface. S. H. Pierce has listened well to its client base and has been conscientious about offering tools for a wide variety of special requirements and exacting needs. However, the interface of the program suffers as a result. There seem to be three dozen different dialog boxes and submenus, many of them buried three-deep in the program. There is little subordination of the specialized, occasionally used features from the everyday ones. Above all, even users who are used to making color corrections in other programs may feel intimidated by the quantity and precision of the controls here. The manual, while thorough, does little to reassure a shaky novice.

We found that normal output can be rather simple. Many of the complicated features could and should be handled by bureaus (there is a special bureau edition of the program), but some users will demand all the power tools. The interface, however, could be better designed to handle both neophyte users and color scientists by rethinking the design and putting the power tools out of the way of those who aren't ready to use them.



PosterWorks 3.0 lets you place and arrange any Encapsulated PostScript graphic on a grid of printing tiles. You can specify the size of the entire "poster" as well as the size and number of tiles. The program outputs to any PostScript-compatible device.



PosterWorks' configuration settings are extremely flexible, allowing for highly professional output. The downside of this versatility is the complexity of the program — advanced features are side by side with the basics.

Conclusions. We were impressed by the speed and the power of PosterWorks and gratified that the developer is continuing to improve and extend it. PosterWorks is in no way a toy product. It gives the PostScript design world a ticket into alternate media. It also gives the display industry a relatively inexpensive alternative to traditional formats, with all the advantages of electronic design: comping, reusing designs in different formats and accessing the

library of PostScript type. With increased capacities and growing support for commercial display hardware, PosterWorks 3.0 is a solid upgrade. Its interface badly needs a redesign, but there can be no doubt about the flexibility and capability of this product, both for steady productivity or occasional use.

S. H. Pierce & Co. is at Suite 323, Building 600, 1 Kendall Square, Cambridge, Mass. 02139. Phone (617) 395-8350; fax (617) 395-1281. □



PageMaker supports SuperATM, with caveat

Bruce Fraser's review of Adobe Systems Inc.'s SuperATM (MacWEEK, Feb. 1) missed a crucial point that I immediately noticed upon opening the packaging. Fraser states that SuperATM substitutes its multiple-master fonts automatically, "provided that the application in use supports the feature." He then proceeds to list several popular Macintosh applications that support SuperATM, including Aldus PageMaker 4.2.

As Adobe indicates in an addendum sheet provided with SuperATM, "If you are using PageMaker

4.2, printing substitute fonts to a PostScript printer using the default Aldus Prep driver will cause printing problems." It goes on to explain that you must bypass Aldus Prep and use the Apple driver to print successfully.

While Fraser is correct that SuperATM substitutes without fail in PageMaker 4.2, this unfortunate printing incompatibility has left me with no choice but to hope that PageMaker 5.0 will solve this problem. In the meantime, I have chosen not to install SuperATM rather than give up the custom printing features available through the Aldus Prep printer driver.

Julie A. Steding
Director of computer operations
Oregon Dental Association
Portland, Ore.

MacWEEK replies:

Steding makes a valid point. However, we feel that for most PageMaker users, SuperATM's font substitution is aimed at inter-

mediate proofing rather than final output. It provides an easy way of viewing and editing documents when the original font is missing, but it isn't a replacement for the real fonts. People who have gone to the length of using PageMaker instead of a simple word processing program are likely to want the real type rather than a substitute, even if the line breaks and typographic color match the originals well.

The only features you are forced to give up by using the Apple driver rather than the Aldus one are custom page sizes and custom line screens for PageMaker-generated objects. On an intermediate proof, these aren't likely to be crucial for most users.

The good news is that, when PageMaker 5.0 ships (scheduled for later this quarter), Aldus Prep will be a thing of the past. PageMaker 5.0 will use the forthcoming Apple-Adobe PostScript Level 2 driver instead of the proprietary solution it favored in the past.

SYSTEM 7 COMPATIBILITY

PosterWorks 3.0

Balloon help	Yes
TrueType	Yes
Publish and subscribe	Yes
Apple events	No
32-bit addressing*	Yes

*According to vendor.

Send your comments to MacWEEK Reviews Department, 301 Howard St., 15th Floor, San Francisco, Calif. 94105. MCI (323-1203); fax (415) 243-3650. Include your name, address and phone number. We reserve the right to edit for clarity and length.

QuickKeys

From Page 49

time. There are two main reasons for this.

First, the interface is somewhat daunting. While recording a single macro or sequence is simple, editing sequences and creating complex QuickKeys is more difficult. The

CE has added three utilities to address some of the problems of creating and using QuickKeys.

utility's modal nature means that some tasks, such as defining sequences, require a series of dialog boxes. QuickKeys' modality also means that it is impossible to invoke the utility in certain situations — such as a modal dialog box

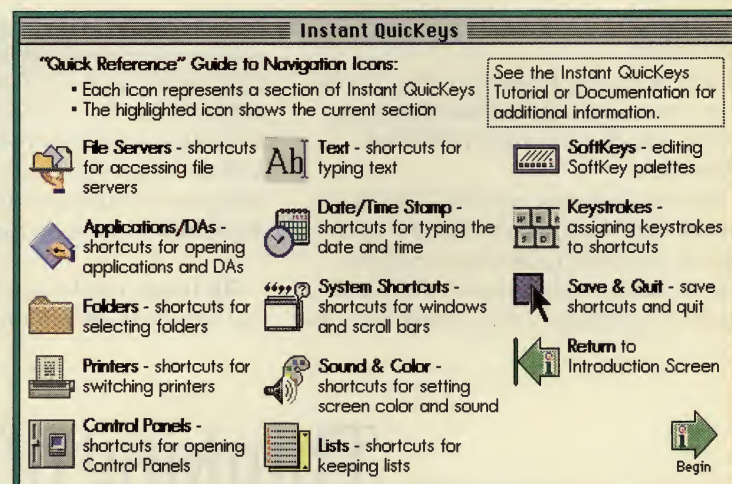
— where it would be useful.

Second, while the QuickKeys Extensions are very useful, they add complications. We installed the full set of Extensions available on the QuickKeys 2.1.3 disk and also added several Extensions specific to other programs, such as Frontier, and a beta AppleScript Extension. This leads to a choice of more than 30 different extensions to use. Coupled with the 13 different kinds of "regular" QuickKeys you can create, the number of options is frequently bewildering: You don't always know which set of tools to use to perform a specific task.

QuickKeys itself often doesn't give you the right kind of guidance when deciding how to perform a task. Consider switching to a specific program that is currently running: When you use the Recorder feature to select a program from the application menu, QuickKeys records a menu selection. Although this approach works, a better way to perform the same task is by using the Process Swap extension, which

lets you specify the application by name and also lets you specify whether or not you want the application from which you are switching hidden or not (which also can be specified by setting the macro to hold down the Option key when choosing the menu item). Throughout QuickKeys there are numerous ways of performing the same task. While this of itself isn't bad — choice is always a good thing — it provides something of an entrance barrier to the utility and contributes to confusion while using it.

In the same vein, QuickKeys has an ample set of tools that lets you provide control over how a sequence of QuickKeys macros proceeds. These controls let you wait until a menu item is checked or unchecked, check for the existence of a button, repeat QuickKeys, and a variety of other items. However, using the controls is often confusing, and with the lack of any kind of debugging tools, editing sequences can



Instant QuickKeys is an application intended to help new QuickKeys users get up to speed quickly with macros. Using a HyperCard-style interface, it walks you through a number of screens, helping you create QuickKeys macros for your specific configuration.

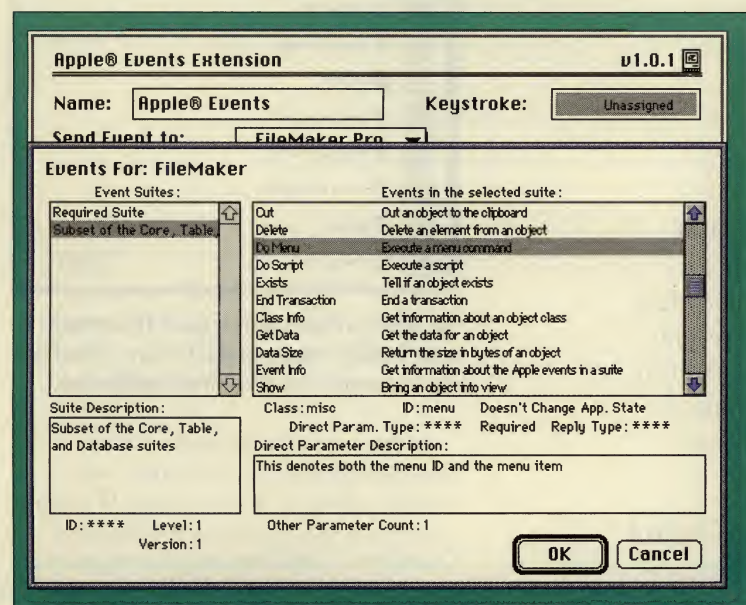
be a time-consuming process.

CE Software has addressed some of the problems of creating and using QuickKeys with three ancillary utilities. Two of them, Instant QuickKeys and QK Icons, are included with the program. A third, QuickKeys RunTime, is

available separately (see story, below left).

Instant QuickKeys. Instant QuickKeys is an application that makes setting up a system of fairly plain universal macros easy and

See QuickKeys, next page



Among the advanced options found in CE Software's QuickKeys 2.1.3 is the capability to pass Apple events with a macro between QuickKeys and other applications. For Apple-event-aware applications such as Claris' FileMaker Pro or UserLand Software's Frontier, this is an extremely powerful feature.

QuickKeys RunTime package

Another way that CE Software Inc. is making it easier to create and use QuickKeys is through the QuickKeys RunTime package.

Available in 10-, 50- and 100-user packs, it allows managers to create QuickKeys macros and install them on users' machines, without providing the ability to create or edit macros.

After you have created a set of QuickKeys macros that you wish to distribute, you use QuickKeys RunTime to create installer disks for different users. When QuickKeys is installed on these machines, only the custom macros are installed, and they operate as if the full package were available. You also can add additional macros to individual machines as needed.

This utility should be a boon to Mac managers, allowing them to deliver the power of QuickKeys to users but keeping the support issues to a minimum by having to debug and support only a single set of QuickKeys macros.

QuickKeys RunTime is priced at \$750 for 10 users, \$3,250 for 50 users and \$5,000 for 100 users. — By Steve Michel

What can you do with QuickKeys?

Some tasks that Mac users have to do fairly frequently take series of mouse movements and keystrokes to accomplish. CE Software Inc.'s QuickKeys lets you perform these complicated sequences with only a few keystrokes or, better yet, by choosing an item on the Apple menu or double-clicking an icon.

For example, turning file sharing off and on requires using the Sharing Setup control panel, which means opening the Control Panels folder, locating the control panel, then clicking on either the Start or Stop button. This isn't particularly difficult, but it's too many steps. QuickKeys has an Extension that will perform this task in the blink of an eye.

In the same vein, you can create icons for the Choosy Extension that let you switch printers quickly and easily. Macros specify which printer or which printer driver to use. QK Icons can turn these macros into applications. These applications become drag-and-drop printer applications: Dragging a document icon onto the printer icon chooses the printer and then launches the application to print the document.

QuickKeys also is, of course, almost required for users of the Apple extended keyboards. Most Mac programs don't use the 15 function keys that are provided on the keyboard (or even the keys labeled Undo, Cut, Copy and Paste). QuickKeys lets you assign functions to any of those keys, in conjunction with the Command, Option and Control keys. If you aren't using QuickKeys, it's hardly worth having the large keyboard.

QuickKeys sequences are a little more difficult but can be just as useful. For example, if you have a document, such as an envelope that is always printed to a specific printer, a QuickKeys sequence can first choose that specific printer, then summon the Page Setup dialog box, print the document and switch back to a default printer.

By using the Mounity Extension, a QuickKeys macro can mount a network volume automatically. Although the alias feature makes Mounity obsolete for System 7 users, it can be handy when used in a sequence. In a manner similar to printing to a specific device, a sequence can mount a network volume, save a file to a specific folder on that volume, then unmount the volume.

QuickKeys leading-edge support for Apple events makes

it an essential tool for those with UserLand Software Inc.'s Frontier or other applications supporting Apple events. QuickKeys can work as a bridge between applications that support Apple events and those that do not.

For example, Adobe Photoshop 2.0 does not support Apple events, yet Photoshop users often want to perform the same tasks with an entire folder of files. Since Frontier can work with files and QuickKeys can control Photoshop, by using the two together, Frontier can loop through each Photoshop file in a folder, sending a message to QuickKeys that opens the file and performs the same set of steps (such as resizing the image or applying a filter), closes the file, and moves to the next one.

QuickKeys also can send scripts to Frontier. In this way, a QuickKeys macro can be triggered from an application that is not Apple-event savvy, such as Microsoft Word. That QuickKeys macro can send a script to Frontier, including perhaps the contents of the Clipboard along with the script.

We have created simple scripts that do such things as look up addresses in Portfolio Software Inc.'s Dynodex from Microsoft Word, based on a selected name. When Dynodex finds the name, it is returned to Word on the Clipboard. The same set of operations can be performed with Claris Corp.'s FileMaker Pro, without the use of Frontier as an intermediary (although Frontier does make the operation easier).

However, owing to the still relatively undefined nature of application support for Apple events, the interface for sending custom events is byzantine and not likely to be useful to most users. QuickKeys can use the "aete" resource found in most Apple-event-aware programs, but a fair degree of technical knowledge is still required to use Apple events and QuickKeys.

Besides support for Apple events, an external command for HyperCard is included with the package that lets HyperCard scripts trigger QuickKeys.

Part of the value of QuickKeys comes with a change of thinking that results in really knowing the program. By using QuickKeys, it can help you adopt a set of consistent practices that make your Mac a friendlier environment in which to work. — By Steve Michel

QuickKeys

From previous page

almost painless. A HyperCard-like interface steps you through the process of creating custom QuickKeys in a dozen different categories.

Besides allowing you to define QuickKeys, Instant QuickKeys makes it easier for you to actually use them. It can create a SoftKey Menu, which you can summon with a key-stroke. This "menu," which is more like a dia-

log, pops up on your screen with a single key-stroke and contains labeled sets of QuickKeys. Clicking on a label either executes the macro or takes you to a second level of a menu. For those who have their keyboards already loaded with macros or have trouble remembering the keyboard shortcut for a specific macro, this is a welcome option.

QK Icons. QK Icons is an application that lets you transform any QuickKeys macro

into a small (11-Kbyte) application. When you open the application, it sends a message to QuickKeys to execute the macro specified when you created the application. This is handy for several reasons. The icons you create can be placed on the desktop or in the Apple Menu Items folder for easy access.

You also can place them in the Startup Items folder so they execute every time the Mac is started up.

Support issues. One of the best parts of QuickKeys is the commitment to the product shown by CE Software. We have always received technical support quickly and accurately. CE also shows commitment by supporting leading technology, evidenced by the Apple events and Frontier support.

The documentation, while generally good, is split among a number of slim guides and an addendum for Version 2.1.3. This can add to the overall confusion of the product, especially when dealing with older Extensions and the new ones specific to Version 2.1.3. The Extensions guide, however, has the best layperson's discussion we have seen of using Apple events.

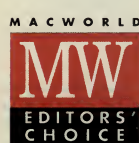
Conclusions. QuickKeys 2.1.3 is very reliable, and its enhancements add significant power to a program that was already extremely capable. Additional utilities, such as Instant QuickKeys and QK Icons, make the product friendlier for both new and experienced users alike.

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Norton Utilities			✓	✓	✓
MacTools	✓		✓	✓	✓

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The SoftKeys Menu feature is one of CE's attempts to make QuickKeys more accessible to users, without having to remember a lot of keystroke combinations.

At the same time, however, CE has stretched the limits of the current user interface about as far as it can go. We think many users will not plumb the depths of QuickKeys — building complex sequences, using Apple events and the like — preferring instead to use the program as a mid-level macro recorder. Adding additional power to the program, as well as drawing in more users, almost requires an overhaul of the interface. We also would like to have improved macro-editing capabilities. None of these cavils, however, detracts from the essential value of one of the Mac's most utilitarian utilities.

CE Software Inc. is at 1801 Industrial Circle, P.O. Box 65580, West Des Moines, Iowa 50265. Phone (515) 224-1995; fax (515) 224-4534. □

SYSTEM 7 COMPATIBILITY

QuickKeys 2.1.3

Balloon help	Yes
TrueType	n/a
Publish and subscribe	n/a
Apple events	Yes
32-bit addressing*	Yes

*According to vendor.

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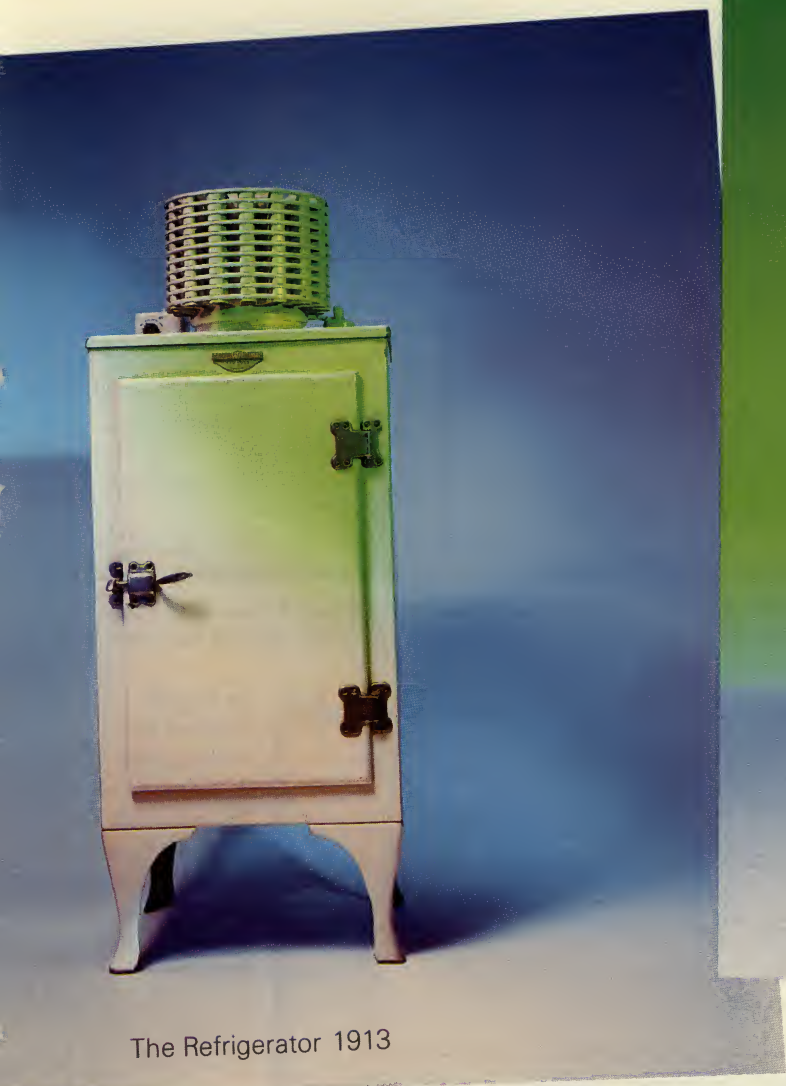
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Interface add-ons extend power for special tasks in Prograph

New additions help programming system

By Linda Custer

TGS Systems' Prograph is a visual, object-oriented programming environment. It includes a runtime interpreter where code can be changed as it executes and a compiler where stand-alone programs can be created.

We reviewed Prograph's current version, 2.5, last year (see MacWEEK, Jan. 13, 1992) and concluded that it was a capable tool for a variety of programming tasks — from fast prototyping to professional-strength application development.

As it ships, Prograph is very complete. It can handle the routines documented in all volumes of Inside Macintosh (old and new editions) and has an Application Builder and class libraries that significantly reduce the work required to design user interfaces.

Despite this wealth, TGS Systems designed Prograph to be extensible through the addition of interfaces for special tasks. We reviewed four different types of interfaces from TGS. Some interfaces have variations and each is sold separately:

- C and Pascal interfaces for integrating code libraries developed in other programming languages.

- SQL/DAL and Oracle interfaces for accessing data in foreign databases.

- A communications interface for working with other applications and computers.

- A Visual Effects Manager for creating special effects in on-screen presentations.

These packages range in price from \$79 to \$199.

Straight from the source.

The database access interfaces provide extensive support for getting information directly from a single Macintosh; a Macintosh network; or — when using Apple's Database Access Language (DAL) — from any networked computer, including mainframes.

One interface is available specifically for connecting with Oracle for Macintosh; another is compatible with any database that can be accessed by DAL or SQL.

These database interfaces consist primarily of Prograph external routines (XPrims) that add many new database functions. For example, the Oracle interface gives Prograph calls to start and stop Oracle databases, log into databases, execute query statements, and listen for errors.

The SQL interface provides similar commands but acts through DAL and can communicate with a much wider variety of databases over networks, including spreadsheets such as Microsoft Excel.

Both the Oracle and SQL interfaces come with example programs that demonstrate how to write a Prograph application as a database front end. For many applications, customizing the example program slightly may be all that is necessary to provide seamless database access for Prograph programs.

Communicating effectively. The Prograph Communications

interface is intended to make Apple's Macintosh Communications Toolbox easier to program. The Comm Toolbox consists of connection, file transfer and terminal tools, and it is most useful for communicating with modems or over networks. The Prograph interface consists of all of Apple's communications tools along with Prograph XPrims and libraries to call the Comm Toolbox.

An example program written in Prograph shows how easy Comm Toolbox programming can be. The application, called Talker, opens a connection over an AppleTalk network or through a serial port between two computers. Anyone developing a terminal program or specialized network program will find the preprogrammed classes and objects here to be very helpful.

Prograph supports the Comm Toolbox adequately for most normal uses. However, extensive direct customization of Apple's tools is not possible.

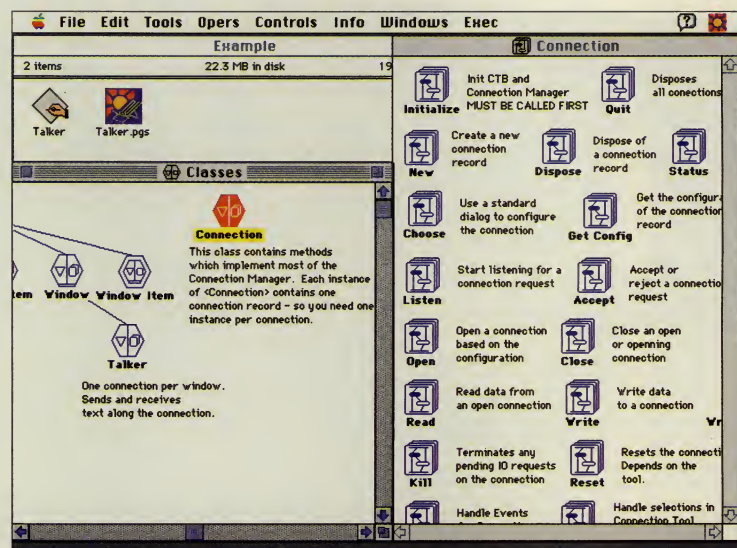
Prograph does not support all of the possible callback routines that Apple allows, such as customizing setup dialog boxes or filtering incoming and outgoing streams for certain characters.

If extensive hand tooling of the Comm Toolbox is required, programmers may find it easier to write their own external routines in another language and simply call them from Prograph.

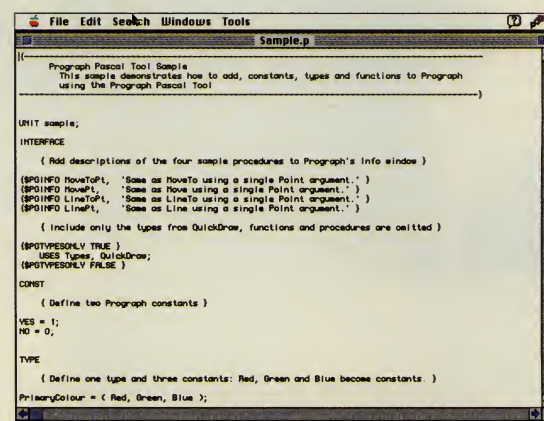
Speaking in tongues. Programmers may decide to develop a project in Prograph, but they may have access to many required routines in libraries produced in a more traditional language. For instance, a complex library of data-acquisition and matrix-manipulation routines might be available from an instrument manufacturer as a precompiled C library. Rather than redo the original work in Prograph, the programmers can purchase an optional Prograph interface and use the library routines directly.

TGS Systems currently offers interfaces for both C and Pascal libraries. Both handle libraries that have been compiled with either Apple's MPW or Symantec Corp.'s THINK products, and both interfaces work essentially the same way. In addition to Prograph, a copy of the appropriate C or Pascal compiler is required to use these tools.

First, the special Prograph C or



The Communications Toolbox interface for Prograph includes code for an example program (shown here as Talker) that allows communications over serial or AppleTalk connections.



The Prograph Pascal tool takes Pascal programs like the one shown here and generates information necessary for Prograph to use the corresponding Pascal library directly.

Pascal tool is launched. A text file is created in this tool that points to Pascal interface sections or C type declarations and function prototypes corresponding to the foreign library.

The Prograph tool then generates two new files: an XDEF file and a new library file. Finally, the foreign compiler is launched and the XDEF file is used to create a new XDEF resource.

The resulting resource is dragged into the Prograph Extensions folder. This exercise allows Prograph to treat the new library function calls as if they had always been part of Prograph.

All that jazz. The last optional interface TGS offers is a package of presentation tools called the Visual Effects Manager (VEM). Whenever a project requires writing to the screen with effects such as dissolves, fades or zooms, using the routines in VEM can make things easier.

VEM routines are recognized by Prograph as soon as a special definition file is placed in the Prograph Extensions folder and Prograph is restarted.

With VEM, programmers can easily implement sophisticated graphic manipulations like bit and pattern dissolves, checkerboard dissolves, Finder-like zooming rectangles, and sliding panels. It also provides easy access to color ramps, the effects used in many slides where the

background is blended smoothly from one color to another.

Conclusions. Prograph is an open language that is easy to extend for specific tasks. With full support for all Macintosh toolbox calls through System 7, most programmers will not need to look outside the standard Prograph package.

However, for those with special interests in recouping investments in existing C or Pascal code libraries or in setting up networked applications that communicate with each other and even share database information, the interface add-ons explored here are a good value. They will more than pay for themselves in a few hours of time saved in programming.

TGS Systems is at 2745 Dutch Village Road, Suite 200, Halifax, Nova Scotia B3L 4G7, Canada. Phone (902) 455-4446; fax (902) 455-2246. □

score card

Prograph interfaces

TGS Systems

Overall value ♦♦♦♦

Version tested: 1.0*

List price: \$79-\$199**

We looked at a number of interface extensions to Prograph, TGS Systems' object-oriented programming environment. The interfaces help programmers seamlessly integrate existing C or Pascal code into Prograph applications, program Apple's Macintosh Communications Toolbox, add presentation features, and allow Prograph programs to exchange information over a network with SQL databases running on Macs or other platforms. The interfaces are well-documented and easy to use. The original Prograph package should be enough to handle most tasks, but if any project needs these extras, they will pay for themselves quickly.

Performance ♦♦♦♦
Features ♦♦♦♦

Ease of use ♦♦♦♦
Documentation/support ♦♦♦♦

* Oracle interface tested was Version 2.0.

**Visual Effects Manager, \$79; C, Pascal and Comm Toolbox interfaces, \$149 each; SQL/DAL and Oracle interfaces, \$199 each. Requires Prograph 2.5, \$495.

SYSTEM 7 COMPATIBILITY

Prograph 2.5*

Balloon help	Yes
TrueType	Yes
Publish and subscribe	No
Apple events	Yes
32-bit addressing**	Yes

*Interfaces reviewed are Prograph extension products. **According to vendor.

Voyager kit: Ticket to books on-line

By Loftus E. Becker Jr.

The Voyager Company has published a series of Expanded Books, including "Jurassic Park," "Backlash" and others, issued as HyperCard stacks. These combine the attractive presentation of printed books with the linking, annotation and searching capabilities of electronic information. The books are surprisingly enjoyable and useful.

Voyager recently released its \$295 Expanded Book Toolkit, which is a set of HyperCard libraries and stacks that lets anyone create and distribute material in Expanded Book form. Noncommercial distribution requires only a copyright notice; commercial distribution requires a 1 percent royalty to Voyager for each copy.

Overall, the Toolkit performs as advertised. It lets you create attractive Expanded Books of virtually any number of pages, complete with annotations, illustrations, notes and an index. (Books linked to CD-ROMs and videodiscs require additional software, which also is available from Voyager.)

Installation is easy. You decompress the stacks and install a few required fonts. A well-thought-out tutorial leads you through the main features of the package and into building simple books. You're better advised, however, to read the entire manual, which includes helpful advice from experienced creators.

Booking time. It's possible to build a tolerable and brief Expanded Book from existing text in 15 minutes or so. But just as good bookmaking requires hard work and artistic skill, anything approaching professional quality requires time and effort.

You begin by preparing text for import. You can type directly in the Toolkit, but we don't recommend it. The Toolkit reads many standard word processing formats through Apple's XTND technology, retain-

ing font, size and style information. Graphics and other formatting have to be added from within the Toolkit.

Ordinarily, you'll want to save each chapter of your book in a separate word processing file. Importing into the Toolkit can take awhile, about a minute for every 1,500 words. Happily, you can tell the Toolkit to import a series of chapters. You can add, delete or reform chapters, albeit slowly.

Usually you'll want to make imported text more attractive. Some formatting (block indentations, for example) must be done within the Toolkit, and only when the book is nearly in final form can you eradicate widows and orphans. The Toolkit contains custom search commands to find these, as well as useful typographical controls to deal with them.

Annotation. There are several ways to annotate words or phrases. You can link words to other portions of the text or to pop-up text windows (the only satisfactory way to deal with footnotes). You also can link words to pictures, sounds and QuickTime movies. In the finished book, the user sees a mark indicating that an annotation is available and clicks to see it. With additional software, linking to audio CDs or videodiscs is easily completed through a dialog box, although you'll have to prepare your material beforehand. For instance, the Toolkit can deal with PICT resources or files but not with other graphics formats.

Indexing. Expanded Books can have a special index chapter, where clicking on a page number takes the reader to that page. You'll have to create the index mostly by hand (although the Toolkit can list all occurrences of a given word or phrase automatically). You can print chapters in formatted form, to proofread and index from paper, if you like.

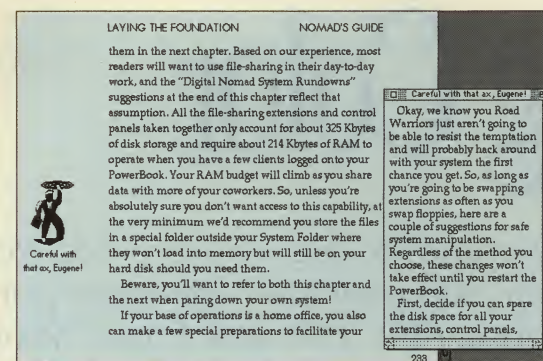
Since Expanded Books are HyperCard stacks, you can customize them like any other stack. One of the bene-

fits of Expanded Books, however, is their familiar, printlike look. We think customization should be used rarely and with discretion.

Publishing the final copy is simple: You execute a "publish" command, which performs final cleanup. Users get a copy of the 203-Kbyte Library, bit maps of any needed fonts and the book itself (which will typically use another 30 Kbytes of disk space). You'll probably want to add some documentation for newcomers. Since most of the information is text, the books compress very well. Electronic distribution is further eased by the fact that an end user needs only one copy of the Library.

The Toolkit has some of the glitches expected in Version 1.0 of any software. We found that operating with few system extensions boosted performance and reduced crashes. Even with our normal complement of several dozen system extensions the crashes were rarely more than an annoyance; we never lost data but once lost part of our book's built-in scripts. Knowing something about HyperCard, we found it easy enough to repair this by copying the scripts from another book.

Other problems were more annoying than the crashes: The XTND translators are imperfect. The only way we could import WordPerfect files was to load them into Microsoft Word and save them again in Word format — obviously a



This page, from "PowerBook: The Digital Nomad's Guide," is part of an Expanded Book developed with Voyager's Toolkit. Clicking on the icon at left opened the scrolling annotation in the box at right.

problem for WordPerfect users. Occasionally the last chapter of a book simply wouldn't print despite our best efforts, although we could save the contents to a disk file. Technical support was helpful but not easy to reach. Working in HyperCard, a Toolkit requirement, was sometimes like swimming in molasses.

Conclusions. Who needs Expanded Books? If you want your text to be read once and absorbed, or if it's primarily reference material, there are better ways to present it — either on screen or on paper.

But for material that is to be studied — read slowly, pondered, marked and thumbed — Expanded Books have definite advantages. They're designed to feel like traditional books, with the familiar image of an attractive page, not a scrolling window. For many, this presentation makes an Expanded Book as easy to read as hard copy.

At the same time, Expanded Books make good use of the special power of computers. Text can be combined with pictures, sounds, and even links to CD-ROMs and videodiscs. They

give the reader useful tools to search, mark and annotate material. For scholarly works, the navigational abilities of Expanded Books can be a welcome change from clumsy flipping between text and endnotes.

Curling up with a good printed book is still one of the most enjoyable things you can do. But for some subjects, particularly educational material, Expanded Books are as good or even better at presenting information than paper books.

The Voyager Company is at 1351 Pacific Coast Highway, Santa Monica, Calif. 90401. Phone (310) 451-1383 or (800) 446-2001; fax (310) 394-2156. □

SYSTEM 7 COMPATIBILITY

Expanded Book Toolkit 1.0

Balloon help	No
TrueType	Yes
Publish and subscribe	No
Apple events	No
32-bit addressing*	Yes

*According to vendor.

IN BRIEF



FaxMe

LaserJet cartridge teaches old printers new trick

Two necessities of the modern office, the laser printer and fax machine, have plenty in common. Apart from taking up precious desktop space, these two devices share considerable functionality.

Practical Peripherals Inc. has taken advantage of this similarity, extending its line of products with the FaxMe cartridge, a \$259 plug-in device that allows a Hewlett-Packard Co. LaserJet Series II or III printer to receive plain-paper fax transmissions at up to 9,600 bps while retaining its printer functionality.

Now that most Mac sites are networked and DOS sites are increasingly so, many companies have many of the once-ubiquitous LaserJets lying around in disuse. The FaxMe cartridge is a good way to press these old workhorses back into service.

The FaxMe documentation is adequate but not exceptional, providing a straightforward guide to configuration.

Installation is a breeze. Simply plug the cartridge into the leftmost font cartridge slot on the LaserJet (the cartridge requires a printer with at least 1.5 Mbytes of memory) and plug the included RJ-11 phone cable into the FaxMe.

Setting the FaxMe's battery-backed parameters involves stepping through a series of one-line configuration "screens," using the LaserJet's "+" and "-" keys to adjust values. The one drawback to the design of the FaxMe is that all communications with the cartridge is through the printer's indicator panel.

Once the FaxMe is installed, the LaserJet can operate in fax-only, printer-only or dual modes. In dual

mode, the printer operates as a normal LaserJet most of the time.

However, when a fax call is detected on the phone line, the FaxMe takes over the printer, receiving and printing the transmission. After the call, the FaxMe releases control of the printer. (The FaxMe can be configured to ignore calls for up to 15 minutes after a print job has completed, to avoid stepping on following jobs that rely on downloaded fonts.) There is no way for the FaxMe to buffer incoming calls, so it must either take a call immediately or ignore it.

The FaxMe cartridge offers a space-efficient means of generating plain-paper faxes with a minimum of dedicated hardware. Its price is comparable to a fax modem, but the ability to leave only the printer powered up is a plus. The FaxMe is a good fax-receiving solution, particularly for those who have old LaserJets to spare.

Practical Peripherals Inc. is at 375 Conejo Ridge Ave., Thousand Oaks, Calif. 91361. Phone (805) 496-7707 or (800) 442-4774; fax (805) 374-7200. — By Jeffrey Sullivan

score card

Expanded Book Toolkit

The Voyager Company

Overall value ♦♦♦

Version tested: 1.0

List price: \$295

Not everyone wants to create (or read) Expanded Books, the attractive HyperCard stacks produced by Voyager's Toolkit. But if you're presenting material that should be read, pondered, annotated and mulled over, Expanded Books are a unique and useful medium. The Toolkit lets you combine text, sound and graphics in a traditional-looking book form. Expanded Books are a natural for educational environments, and the Expanded Book Toolkit provides a complete, fairly simple system for creating them.

Performance ♦♦♦
Features ♦♦♦

Ease of use ♦♦♦
Documentation/support ♦♦♦

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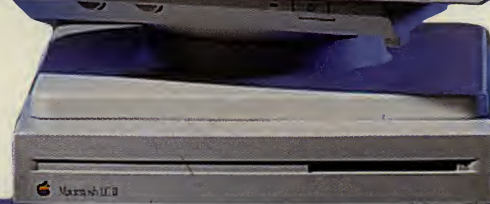


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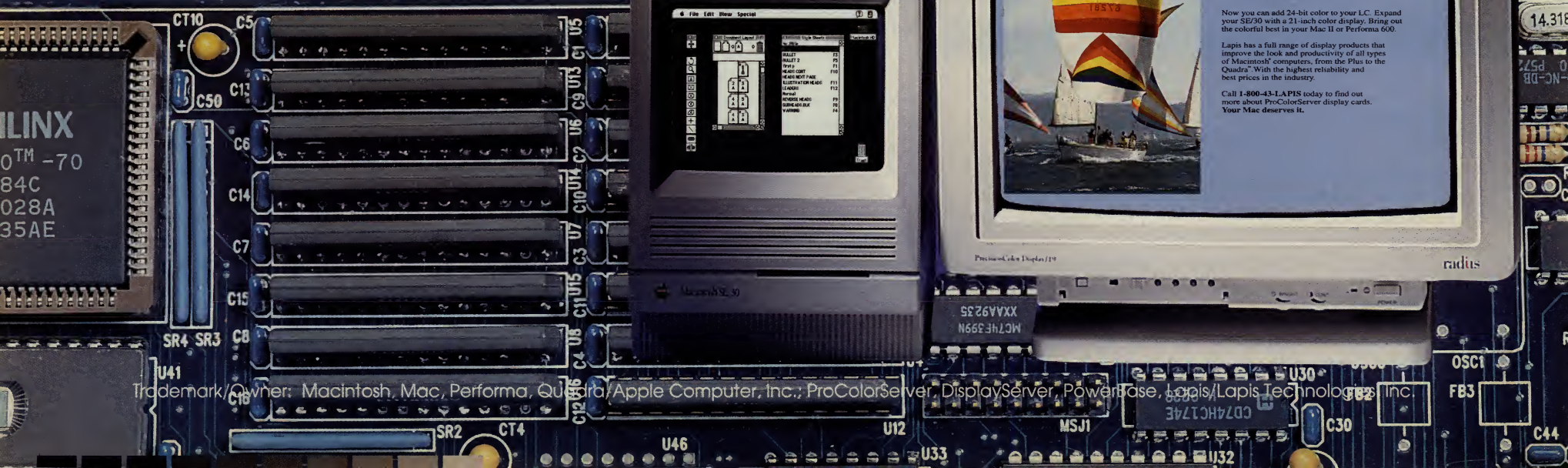
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Mac LCD projection systems display a professional image

Portability and light requirements are major issues when shopping for one.

By Larry Stevens

New hardware for projecting Mac images is faster, supports more colors and can accept a broader range of input media. However, there are trade-offs in price, portability and light requirements depending on the projection technology you choose, the level of color capability you need and whether you need to project moving images.

Projection devices come in two basic technologies: LCD and CRT. LCD projection devices are standard fare for presentations that travel. They are easy to set up, lightweight and relatively inexpensive, ranging in price from \$1,500 to \$7,500. While CRT devices are fairly straightforward, LCD technology includes a large number of subtechnologies to choose from.

LCD panels. The lightest and least expensive LCD devices are LCD panels. A large number of companies offer LCD panels, including Apollo Audio Visual,

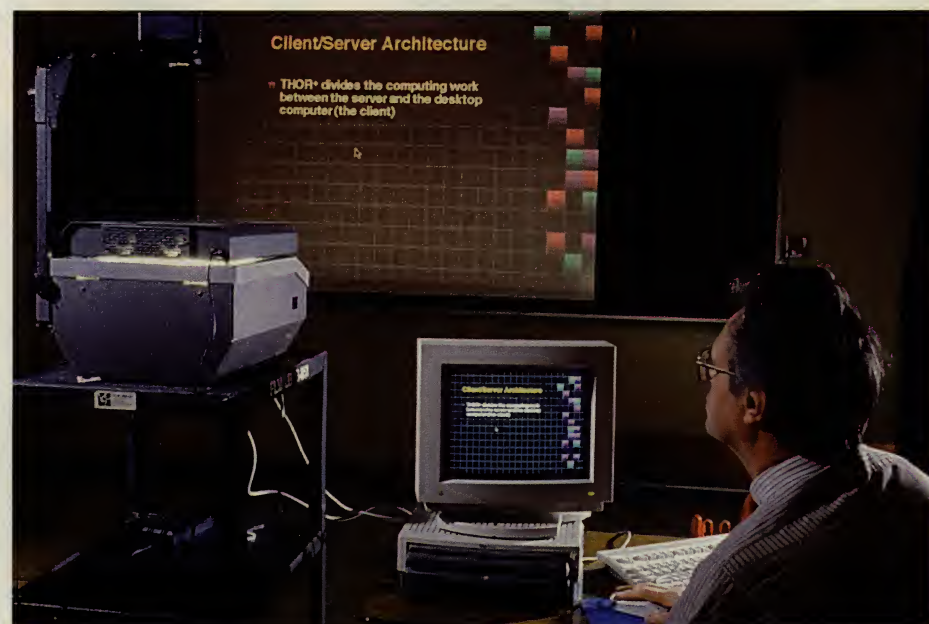
Chisholm Inc., Dukane Corp., In Focus Systems Inc., nView Corp., Proxima Corp., Sayett Technology Inc. and Sharp Electronics Corp.

Each of these manufacturers offers an array of products that vary in number of colors displayed, types of input, and use of passive- or active-matrix LCD panels.

Color vs. monochrome LCD.

The lowest-cost LCD panels, such as Proxima's \$1,895 MultiMode II, display monochrome images. While a few years ago monochrome panels were virtually the only systems available, today monochrome systems, such as In Focus' 1600GS, are less prevalent. More typically, low-end panels display "simulated color" — shades of gray or another color. For example, nView's ViewFrame II+2 displays eight shades of gray, while Proxima's MultiMode II displays 16 shades of magenta.

Panels that display in any number of actual colors rather than



JOHN STARKEY/BLACK STAR

Carl Snow, media director at Purdue University in West Lafayette, Ind., prepares a presentation using a MediaPro LCD panel from nView, which projects a color image using an overhead projector.

shades are often dubbed "true-color" panels to distinguish them from simulated-color panels. This can be confusing, as some monitors and other display hardware products normally associate "true color" with display devices that support 16.7 million colors.

Some LCD panels, such as Apollo Audio Visual's Vision 16.7, do display the full 16.7 million colors found in 24-bit images. Others, such as nView's ViewFrame Spectra Mini, display a maximum of 512 colors.

Chisholm has two products in the middle range, the TFT Rainbow with 2,197 colors and the TFT Rainbow HD with 614,125 colors. Obviously, all other things being equal, the more colors a panel can display, the more you'll pay for it — the Vision 16.7 costs \$7,595, while the ViewFrame Spectra Mini is priced at \$2,795.

According to some users, color is worth the price. Carl Snow, media director at Purdue University in West Lafayette, Ind., recently replaced his department's old monochrome LCD panel with nView's MediaPro, which displays up to 262,144 colors.

"Monochrome panels are fine for displaying screens when we're training people on software," Snow said. "But they're very limited since we can't use them for presentations, CD-ROM programs or anything that isn't entirely text-based. A media center in the 1990s can't be limited to monochrome."

Passive vs. active. Besides number of colors, LCD panels are distinguished by their use of either

passive- or active-matrix technology. Passive-matrix systems, such as the In Focus 5000FX, which delivers 5,000 colors for \$2,995, are relatively low in cost but have slower response times than active-matrix LCD panels. As a result, video images displayed on the screen will have shadows, and a mouse pointer moving across the screen may become invisible (see story, this page).

Because of these disadvantages, as well as the dropping cost of active-matrix panels, some experts said that passive-matrix LCD products are slowly joining monochrome panels in the dustbin of old presentation technologies.

Putting light on the subject.

The one major disadvantage of color active-matrix LCD is that it needs a high-powered light source to function well. For optimal viewing, most manufacturers recommend overhead projectors that generate 3,000 lumens of light intensity.

Unfortunately, many low- to medium-cost overhead projectors produce only 1,000 to 2,000 lumens. So if you're considering buying a color LCD panel and don't already have a high-wattage overhead projector, you'd better add at least \$1,000 to \$2,000 to your budget to buy one.

But even if you're willing and able to budget for a high-end projector, there's no guarantee that the offices you travel to will have done so. Most traveling presenters choose LCD panels because they're lightweight and compact. But the rub is that when you arrive at your destination,

See Projection, Page 62

Passive matrix finds home in new color PowerBook

Buyers of Apple's just released PowerBook 165c, whose groundbreaking color display is based on passive-matrix technology, also should examine the limitations inherent in that technology. The differences between active-matrix and passive-matrix LCD technologies show up most during animated presentations and mostly affect presenters. Here is why.

Standard LCD panels use tiny squares of liquid crystals sandwiched between two layers of glass. In a relaxed state, the squares are twisted, allowing light to pass through. When voltage is applied to a square, it begins to untwist. The flatter the square becomes, the more it blocks the light. Regulating the amount of current determines the amount of light that passes through each square, thus creating the projected image.

But with passive-matrix LCD panels, pixels are controlled by a matrix of wires and electrodes. Voltage travels across the wires from electrode to electrode, activating one pixel at a time.

Passive-matrix's response rate to the changes in the on-screen image ranges from 150 to 300 milliseconds and is fine for still presentations. However, animations and Quick-



JOHN GREENLEIGH

Apple's new PowerBook 165c uses passive-matrix LCD technology in its color display.

Time movies, which require a faster response rate, often are accompanied by distracting ghosts or shadows when shown on passive-matrix LCDs. Even a moving mouse pointer often will become invisible when projected by a passive-matrix panel.

Because each pixel is controlled directly by its own thin-film transistor, active-matrix systems can keep up with animations and fast-moving mouse pointers. The difficulty of placing transistors at every pixel location makes active-matrix more expensive than passive-matrix panels. — By Larry Stevens

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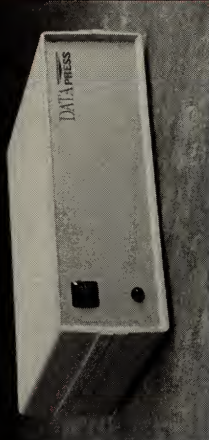
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Projection

From Page 59

you have to hope that the available light source is adequate.

Unfortunately, according to Cecil Craft, director of information systems at M.D. Buyline Inc. of Dallas, that's not always the case. He said, "The lack of a good light source is the weakest point in using our Ovation sx [from Proxima] for traveling."

M.D. Buyline helps health-care facilities purchase high-end medical diagnostic equipment such as magnetic resonance imaging (MRI) machines.

The disadvantage of LCD projectors is that they are heavy, weighing from 20 to 40 pounds instead of less than 10 pounds for most LCD panels.

Craft said he creates colorful graphics for his presentations meant to pitch the company's services or illustrate points in training sessions. "Our goal is to present our company as high-tech and professional," he said, "and we try to have the quality of our presentations reflect that image."

Craft added that in his office, with a good overhead projector, his Proxima panel displays "a really beautiful image." But if the image is projected over a low- or medium-light overhead projector, much of the vibrancy of the graphics can be lost.

LCD projectors. One solution to the light problem is to opt for an LCD projector, where LCD technology is integrated with a light projector. A number of companies include LCD projectors in their line, including In Focus, nView, Sharp and Sayett.

The main disadvantage of these projection units, apart from their higher cost, is that they are heavy, weighing from 20 to 40 pounds instead of less than 10 pounds for most LCD panels. They are also bulkier, shaped more like film-strip projectors than panels, which are about the size and shape of a PowerBook.

Still, Clair Crookston, senior vice president at Mac software training company MacAcademy of Ormond Beach, Fla., said he prefers to lug his MediaShow from Sayett so his presentations can travel completely self-contained to his classes. "We live or die by the quality of our equipment, so we don't rent anything, we don't depend on the hotel's equipment; everything is shipped in or carried in," Crookston said.

Buyline's Craft agreed that an LCD projector would eliminate his occasional problem with poor light sources. But, he said, "We just can't ask our marketing people to carry any more weight. They're already lugging in a compact VCR with an AC power adapter, two compact speakers, their notebook computer and anything else they need, such as their purse and briefcase."

Other light solutions. Two data projector companies have alternative solutions to the light problem.

Dukane's MagnaView 860 packs an overhead projector and LCD panel in one unit. The model folds

up more compactly than most overhead projectors, and it also projects standard transparencies.

Sharp's QA-BL1 backlit unit converts a number of Sharp's LCD panels into direct-view panels. Although this eliminates the light problem, the solution works only for small groups of about 10 or fewer viewers.

Light-valve LCD. The newest technology in presentation hardware is LCD light-valve projection, which combines cost-effective LCD technology with high-end CRT projection systems. From the outside, light-valve systems, such as Barco Inc.'s BarcoData 5000 LC (or Light Cannon), look like an LCD projector.

Inside, this system consists of three 5.8-inch, active-matrix LCD panels activated by three CRT projections (red, green, blue). A single lens then converges and, with a 575-watt, metal-halide lamp as the light source, projects the image.

The projected image is very sharp and bright, allowing about 1,000 lumens to pass through, compared with 100 to 200 in standard LCD projection systems.

Light-valve mechanisms project the highest-quality image but weigh in at about 100 pounds and sport a hefty price tag — \$42,995 for the Light Cannon. Still, this is a significant price breakthrough when compared with the \$150,000 retail price tag for CRT-based light-valve projectors.

Ultimately, the best way to judge which system is right for you is to try one out, either at an audiovisual hardware showroom or by renting a unit from a local AV production house.

Although no single technology or product can handle every presentation scenario or fit every presenter's budget, the available options in LCD presentation hardware offer a good price-performance ratio for budget-conscious presenters. □

Product Info

APOLLO AUDIO VISUAL

Vision 16.7: \$7,595

60 Trade Zone Court, Ronkonkoma, N.Y. 11779
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BARCO INC.

BarcoData 5000 Light Cannon: \$42,995

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CHISHOLM INC.

TFT Rainbow: \$4,295

TFT Rainbow HD: \$5,295
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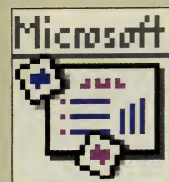
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New and upgraded desktop presentation packages

Since our last coverage of presentation products in ProductWatch (see MacWEEK, Sept. 28, 1992), several upgrades and new products have appeared. Here is a brief summary:

► PowerPoint 3.0

from Microsoft Corp. now provides new outlining, graphics and cross-platform support. Using Outline View, you can work with the contents of the entire presentation as an outline.



A new Shape tool provides 24 adjustable shapes and facilitates the creation of diagrams and drawings. A graphing function, modeled after a similar function in Microsoft Excel, lets presenters create charts from tables. Macintosh and Windows PowerPoint users now can share files.

► **Passport Producer** from Passport Designs Inc. shipped with QuickTunes.

Passport Producer is a multimedia presentation product designed to integrate and precisely synchronize different media types.

The **QuickTunes** package contains 16 MIDI files, five digital audio files, and 15 color and monochrome backgrounds that can be pasted into presentations.



► **Astound**, a desktop presentation package from Gold Disk Inc., also was released. The product is geared for "everyday Mac users," according to the company.

It provides tools to add music, narration, QuickTime video, moving text and cel animations to presentations. A Windows runtime version also shipped.

— By Larry Stevens





GORDON STUDER

MacInTouch RIC FORD

Know-it-all installers don't really know it all

Here are some suggestions for the people inventing the future of Mac software installation, plus notes on two utilities that help manage installations now.

ISSUES & TRENDS

Father knows best. Like democracy, one-button software installation is a lot simpler in theory than it is in practice.

Apple's Installer has a variety of quirks and traps, while several third-party installers offer their own set of tricks and problems.

There are bugs and oversights in the installer software, and many scripts are too simplistic to work smoothly in all systems. If you somehow get all the pieces working on a single Macintosh, networked installation is the next hurdle.

One issue stands above all the rest in this software-management mess: We have lost control to the installers, which take over and silently hack up our disks and files on the basis of some one-time

concept of a generic system.

The particulars of this individual disk and this individual Mac user are assumed to be irrelevant, and changes in the operating system or hardware may break the scripts.

What files are being modified, deleted or added? What resources? How do you recover when a problem is introduced during installation? How do you tailor the installation to your own individual configuration? What happens when you get other new system components?

Don't worry — the installer knows best. Just click the button.

Knock knock. Imagine an alternative approach that would forsake the illusion of installer omniscience to involve a human in the process.

Such an installer would offer preflight reports, something like those

of Apple's Compatibility Checker. Before the script starts changing your files as it sees fit, you could get a list of all the files and all the resources being modified.

An installation journal could show what was changed and what decisions were made during the actual run.

A sophisticated installer could even compare two different scripts and alert the user to conflicts, something that is a real problem now in networking software.

How about an "expert" mode for overriding the individual actions of the script on resources and files? Already, many people use powerful file and disk utilities without destroying their systems. People need a similar level of capability from their installers, even if they don't use such programs every day.

Let's face it: The current tools are not working well enough. When scripts add unneeded fonts to System 7.1, add unwanted extensions to the System folder, restart the Mac arbitrarily and create superfluous System folders on the wrong volumes, it is time to give us back the key to the control room. After all, it's located in our office.

Apple already took the initiative with its Installer. The time has come for the next step.

PRODUCTS

I spy. So far, there is little ground between simple, one-button installations and hard-core script hacking.

On the bright side, though, Alex Maluta has released a more powerful version of his freeware script-analysis program, InstallerSpy.

Version 0.4 offers both interactive browsing of Installer scripts and the ability to create detailed reports on a script's contents.

A solid understanding of the Apple Installer, documented in Apple's Installer Scripting Guide (see MacWEEK, Sept. 28, 1992), is a prerequisite.

InstallerSpy does not provide any control or editing of scripts, but it does let you see what resources and files are being modified, giving you enough information to analyze problems and work around them manually.

The program is available from user groups and on-line information services. On ZiffNet/Mac it is file INSPY.SEA in the Applications library at location ZMC:DOWN-TECH.

Trik treat. A spinoff from Trik Inc.'s networking products offers an attractive option for people who want to create good installation packages with a minimum of expense and effort.

Trik's NetDistributor Pro demo is actually a functional application

Ask David Ramsey

Photo CD software needs

Q. I've got Eastman Kodak Co.'s Photo CD demo disc but can't get it to mount on my AppleCD 300. Isn't this drive Photo CD-capable?

A. It is. In fact, virtually any CD-ROM drive can read single-session Photo CDs with the right software, but the Mac software you need isn't immediately obvious.

To read Photo CDs on a Mac, you need a Photo CD-capable driver, such as Version 4 of Apple's CD-ROM drivers; the Apple Photo Access extension; and (surprise) QuickTime 1.5. In most cases the inability to read Photo CDs simply means that QuickTime isn't loaded.

Q. Sometimes, I can't launch an application even when there's plenty of contiguous memory — I get the message that there's not enough. Other times the same applications launch perfectly. Why?

A. This probably is a result of having a lot of data on the Mac Clipboard. Every application has its own clipboard data, stored in the application's memory partition. When you launch a new application, its local clipboard is preloaded with the contents of the system Clipboard. If this is a lot of data, it might take up so much room in the partition that there's no room for the application.

The solution is to clear the main Clipboard; the quickest way to do this is to select a single character in a file name and copy it.

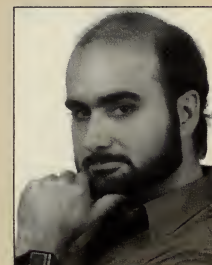
Q. I see that some companies are offering cache cards for the Quadra. Doesn't the 68040 already have a cache?

A. It does. There are two separate 4-Kbyte caches — one for instructions, another for data — built into the 68040 chip. Other 68000 family chips have caches, too: The 68030 has 256-byte caches for instructions and data, while the 68020 has a single 256-byte instruction cache.

The caches on the '040 are important to its performance, but they're still pretty small, and an external cache can improve performance 15 percent to 20 percent in some applications.

Next week: New Mac memory architecture explained.

Please send questions to David Ramsey on CompuServe: 76702,335 or to Ask David Ramsey, c/o MacWEEK, 301 Howard St., 15th Floor, San Francisco, Calif. 94105.



for creating and installing packages of software. Trik's demo lacks the real product's network-distribution capabilities, but it can be used to create complete, stand-alone installers and even to do network distribution on a limited basis.

Flexible testing and decision capabilities let you tailor the installation of files and folders to the target environment, but the current version lacks full support for the resource-level operations

that Apple's Installer handles.

The program may be used freely for noncommercial applications, such as shareware distribution, and Trik offers flexible licensing for a range of commercial applications.

On ZiffNet/Mac the program is available as file NETDPR.SEA in the "Demos and Updaters" library. Trik Inc. is at 400 W. Cummings Park, Suite 2350, Woburn, Mass. 01801. Phone (617) 933-8810 or (800) 466-8745; fax (617) 933-8648. □

Comments on MacInTouch are welcome at 7 Parmenter Ave., Maynard, Mass. 01754. Phone (508) 897-2621. Address electronic mail to RICFORD on AppleLink or MCI Mail; to 72511,44 on CompuServe; or on the Internet to 72511.44@compuserve.com. Join us on-line in the MacWEEK Forum at location ZMC:MACWEEK on CompuServe or ZiffNet/Mac.

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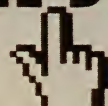
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The problem with SyQuest technology—it appears inexpensive. You'd have “invested” a whopping \$6800 for the cartridges in this photo. You could have *saved* \$5000 for the same amount of storage.

Even SyQuest's new 88MB device, the one that writes to 44MB cartridges, is not the answer. It behaves more like a floppy disk than a hard drive. That's right, when writing to a 44MB cartridge (Isn't that what you have?) it performs 87% slower than its predecessor. Is that what you want - a big, heavy, expensive diskette?

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Capacity

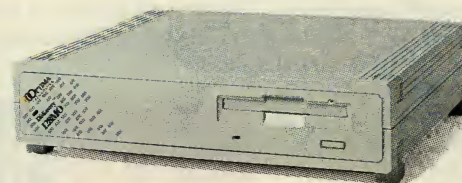
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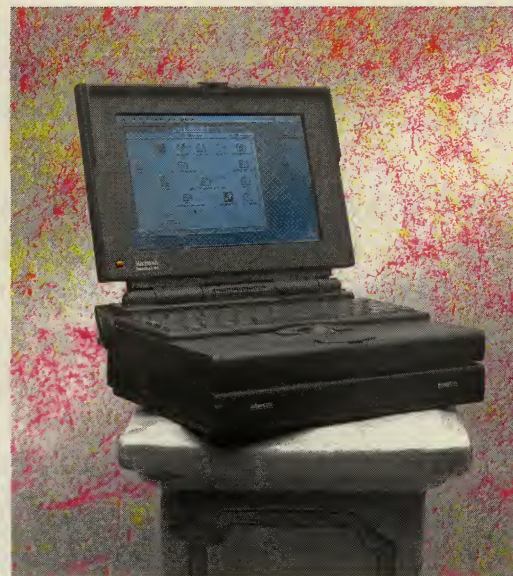
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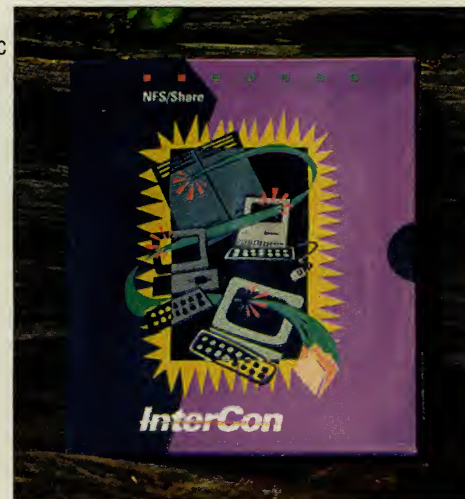
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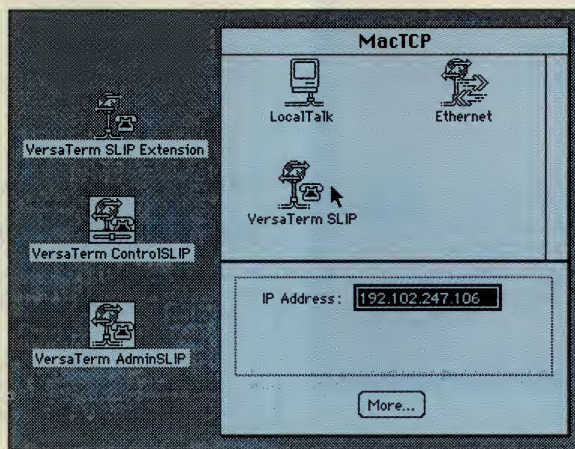
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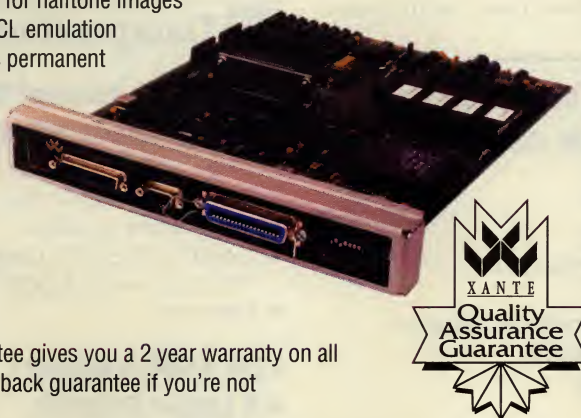
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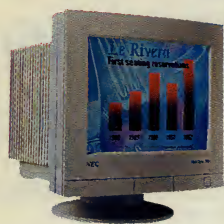
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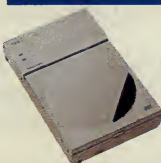
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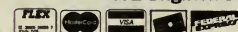


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PinPoint 20" Multiscan Trinitron

MONITOR —\$1799.
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88 Meg SyQuest Removable Drive
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20 Multiscan Trinitron \$3349.
Spectrum 8-24 PDQ SuperMatch
20" System
Accelerated video card with 20"
SuperMatch \$2349.
Spectrum 24 Series IV/
SuperMatch 17T Trinitron System \$1895.

Spectrum 8-24 / 8-24 PDQsi \$839.

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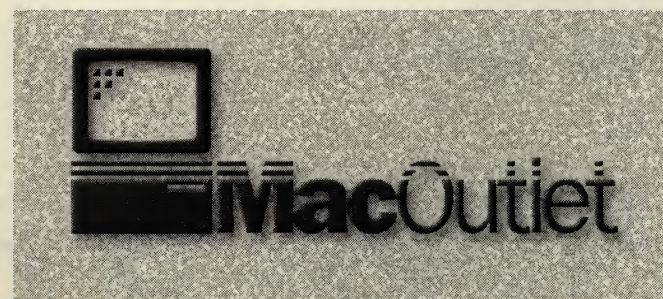
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Sony

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Gentlemen, start your engines. Introducing the DEC DSP-3105 1-gigabyte drive. This Eddy award-winning monster moves like Ricochet Rabbit on double espresso. In fact, it's the world's fastest 3.5 inch drive. Thanks, in part, to a 5400 RPM spindle speed and a whopping 512K drive cache. With our minimum-footprint Cyclone™ enclosure, a great price, and 5-year warranty, no one can touch it for value. Says *MacUser*, it's "a dream drive mechanism for most Mac users."

Cyclone enclosure	\$1899
Classic-style footprint enclosure	\$1849
Internal	\$1799

Hey! What the heck is a Cyclone Drive, anyhow?

No need to yell. Cyclone is our name for the small footprint "brick" drives in our line. Our highest performers. They feature a sturdy metal enclosure (You know those black boxes you read about that survive in plane crashes? They're made of metal, too. A coincidence? We think not). A rugged, continuous-use, auto-switching 40-watt power supply, compatible around the globe. And class B FCC approval. They're small, yet, they crank. Perfect for use with those huge Macs that take up a lot of your desk's real estate. Available as a DAT drive or hard discs from 512 MB and up. Oh, yeah, one more thing: to our knowledge, no one offers a better value on small footprint, high capacity drives. Check it out.



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If you're looking for DAT, you'll love dis. Cyclone DAT drives. They feature the zephyr-like Wang DAT drive mechanism – the industry standard for reliability. Our own Cyclone small-footprint chassis. And a price that won't dis you. Our standard Cyclone DAT drive has a 2.0 GB capacity. The compression model, up to 5 gigs. Both come with Dantz™ Retrospect back-up software, and a 90-meter DAT tape, free. Dat's all you need.

Cyclone Standard DAT	\$1199
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You want to upgrade your removable drive to 88 megs, but you've got a shelf full of old 44s staring you in the face. You have two options. One, use the old cartridges as coasters at geek cocktail parties. Or two, buy the new Spin Syquest 5110C drive that reads and writes both 44 and 88 meg cartridges. True, this drive does not format 44 MB cartridges, but we have a way around that - pre-formatted 44s.

Syquest 5110C 44/88 Drive	\$599
Syquest 88 MB Removable	\$499
Syquest 44 MB Removable	\$399
Syquest Media	
Unformatted 44 MB	\$61
Unformatted 88 MB	\$99
Formatted 44 MB	\$85
Formatted 88 MB	\$139



ZERO FOOTPRINT DRIVES

We've gotten letters lately - mostly in crayon - from a few folks asking why we call these drives "zero footprint" when they obviously exist in three dimensions and take up space. We'd like to point out that when placed under your Plus or Classic or SE it takes up no more space than the computer already does. Zero. Neat trick, huh? Our sturdy zero-footprint drives feature a number of different mechanisms from makers like Conner, Quantum, Toshiba. Check the matrix below for the capacity you need. And please, put down that crayon.

Capacity (MB)	Model Number	Average Access Time (msec)	Transfer rate (K/sec)	MTBF (Hours)	MFG warranty (months)	Internal Drive Price	External Drive Price	Cyclone Drive Price
Connor								
85	CP-30080E	16	1300	150000	24	\$219	\$289	
120	CP-30100	16	1300	150000	24	\$279	\$349	
170	CP-30170E	16	1400	150000	24	\$319	\$379	
213	CP-30200	15	2000	150000	24	\$419	\$479	
Quantum								
42	ELS 42S	19	1600	250000	24	\$185	\$249	
85	ELS 85S	17	1800	250000	24	\$229	\$299	
127	ELS 127S	17	1800	250000	24	\$319	\$379	
170	ELS 170S	17	2000	250000	24	\$349	\$409	
240	LPS 240S	16	2300	250000	24	\$499	\$569	
525	LPS 525S	10	2900	350000	24	\$1069	\$1119	\$1169
80 (Pwrbk)	GRS-80	17	1900	150000	12	\$349		
120 (Pwrbk)	GRS-120	17	1800	150000	12	\$469		
160 (Pwrbk)	GRS-160	17	1900	150000	12	\$519		
Toshiba								
870	MK-438	12	1500	250000	36	\$1099	\$1159	\$1199
1.2 GB	MK-538	12	2800	250000	36	\$1449	\$1499	\$1549
DEC								
1.05GB	DSP-3105	9.5	2600	250000	60	\$1799	\$1849	\$1899

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STORAGE WORLD



Model

External SyQuest 44mb (*One Cartridge Inc.)	\$389
External SyQuest 88mb (*One Cartridge Inc.)	\$489
External SyQuest 88mb C** (*One Cartridge Inc.)	\$589
Internal 44mb SyQuest (for Quadra 900&950)	\$349
Internal 88mb SyQuest (for Quadra 900&950)	\$469
Internal 88mb C SyQuest (for Quadra 900&950)	\$559
External SyQuest Dual 44mb (*One Cartridge Inc.)	\$725
External SyQuest Dual 88mb (*One Cartridge Inc.)	\$895
External SyQuest Dual 44/88mb (*One 44 & One 88 Cartridge)	\$895
External SyQuest Dual 88C mb (*One Cartridge Inc.)	\$1075
External SyQuest Dual 44/88C mb (*One 44 & One 88 Cartridge)	\$999
SyQuest 44mb Cartridge/10 Pack	\$63/\$620
SyQuest 88mb Cartridge/5 Pack	\$97/\$480

All SyQuest Drives come with FWB™ HDT Formatting Software. SyQuest carries a TWO year Warranty on Drives and ONE year on Cartridges.

* READS AND WRITES 44 AND 88 CARTRIDGES. Does not format 44 cartridges.

Quantum

"An Apple Authorized Brand"

Unformatted Capacity

Capacity	Speed	Size	Internal	External
*GO•80mb	16ms	2.5"PB	\$299	\$399
*GO•120mb	16ms	2.5"PB	\$439	\$539
*GO•160mb	16ms	2.5"PB	\$519	\$619
LPS 240mb	10ms	3.5"TH	\$439	\$499
LPS 525mb	10ms	3.5"TH	\$939	\$999
ELS 42mb	19ms	3.5"TH	\$175	\$235
ELS 85mb	17ms	3.5"TH	\$215	\$275
ELS 127mb	17ms	3.5"TH	\$289	\$349
ELS 170mb	17ms	3.5"TH	\$319	\$379
Pro 425mb	9ms	3.5"TH	\$879	\$939
Pro 700mb	10ms	3.5"TH	\$1189	\$1249
Pro 1.0	10ms	3.5"HH	\$1359	\$1419
Pro 1.2	10ms	3.5"HH	\$1589	\$1649

TWO year Warranty. *ONE year Warranty on GO drives.
 FWB™ HDT Formatting Software Included.

Magneto Optical Drives

TEAC

Model	Speed	Size	External
128mb	45ms	3.5"HH	\$995
128mb cartridges (Tosoh)			\$39

RICOH

Model	Speed	Size	External
650mb	28ms	5.25"FH	\$2395
128mb	45ms	3.5"HH	\$1095
128mb/650mb Cartridge			\$39/95

Maxtor®

Model	Speed	Size	External
Tahiti II	35ms	1.0gb	\$3195
1.0gb Optical Glass Cartridge			\$225

All MO drives come with FWB HDT software,
 ONE MO cartridge and have a ONE year Warranty.

Tape Back-Up Drives

ARDAT

Model	External
4.0gb - 8.0gb HC	\$1395
2.0gb	\$1195
90m / 60m Tape	\$25/\$19

TEAC

Model	External
600mb Tape Backup Drive	\$695
150mb Tape Backup Drive	\$485
600mb / 150mb Tape Cassette	\$29/\$19

All tape backup drives come bundled with FREE
 Retrospect V.1.3, one tape and have a ONE year Warranty.

FUJITSU

Unformatted Capacity	Speed	Size	Internal	External
425mb	9ms	3.5"HH	\$849	\$909
520mb	9ms	3.5"HH	\$899	\$959
1.2gb	15ms	5.25"FH	\$1399	\$1499
2.0gb	15ms	5.25"FH	\$2349	\$2449
2.4gb	12ms	5.25"FH	\$2549	\$2649

FIVE year Warranty.
 FWB™ HDT Formatting Software Included.



HEWLETT PACKARD

Unformatted Capacity	Speed	Size	Internal	External
1.2gb	11ms	3.5"HH	\$1895	\$1955
1.2gb	14ms	5.25"FH	\$1735	\$1835
1.6gb	14ms	5.25"FH	\$2095	\$2195
2.2gb	19ms	5.25"FH	\$2695	\$2795
2.4gb	19ms	5.25"FH	\$3095	\$3195

FIVE year Warranty.
 FWB™ HDT Formatting Software Included.

TOSHIBA

Unformatted Capacity	Speed	Size	Internal	External
830mb	12.5ms	3.5"HH	\$1095	\$1155
1.2gb	12.5ms	3.5"HH	\$1495	\$1555
CD-ROM				
600mb	200ms	3.5"HH	\$545	\$595

Toshiba carries a THREE year Warranty on drives. ONE year Warranty on CD Rom.
 Driver 7 Formatting Software Included.

MICROPOLIS

Unformatted Capacity	Speed	Size	Internal	External
1.0gb	10ms	3.5"HH	\$1635	\$1695
2.0gb	12ms	5.25"FH	\$2795	\$2895

Fast SCSI-2 Drives. FIVE year Warranty.
 FWB™ HDT Formatting Software Included.

Maxtor®

Unformatted Capacity	Speed	Size	Internal	External
120mb	15ms	3.5"TH	\$265	\$325
213mb	15ms	3.5"TH	\$385	\$445
340mb	15ms	3.5"HH	\$635	\$695
535 mb	12ms	3.5"HH	\$975	\$1035
1.2gb	13ms	5.25"FH	\$1395	\$1495
1.7gb	13ms	5.25"FH	\$1695	\$1795

ONE year Warranty on 3.5" Drives and TWO Years on 5.25" Drives and 120mb/213mb Drives.
 FWB™ HDT Formatting Software Included.

CONNER

"An Apple Authorized Brand"

Unformatted Capacity	Speed	Size	Internal	External
85mb	17ms	3.5"TH	\$215	\$275
120mb	19ms	3.5"TH	\$285	\$345
170mb	13ms	3.5"TH	\$315	\$375
212mb	12ms	3.5"TH	\$415	\$475
540mb	12ms	3.5"HH	\$985	\$1045

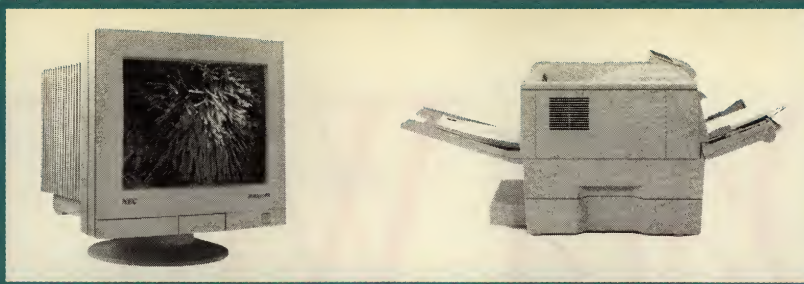
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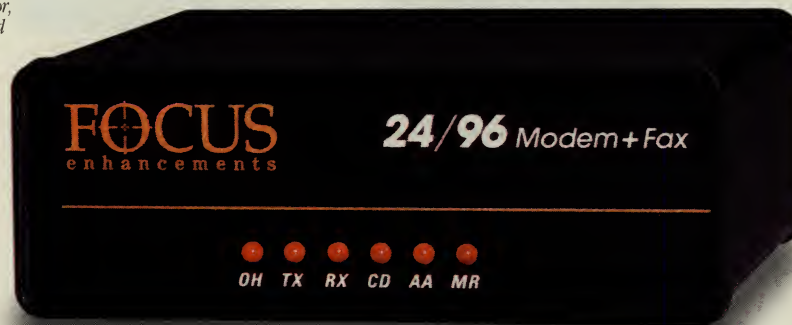
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APS's Turbo DAT backs up at a rate as high as 17MB per minute, making it one of the fastest performers in the market. That's as much as 20 percent faster than other DAT units! With an incredible 80,000 hr MTBF and a two-year warranty. These DATs also come bundled with Retrospect, the standard in tape backup software from Dantz Development (we include Sytos Plus with PC versions), so you get unrivaled performance and ease of use.



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127	299	369
170	369	429

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Includes new 5-year warranty

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MB	INTL	EXTL
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340	699	769
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C 120 MB 3.5" LPS, 2 yr warr, 150,000 MTBF	\$278	\$338
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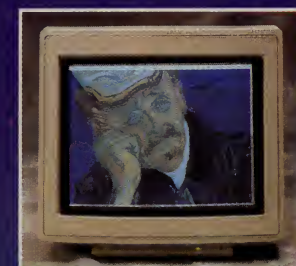
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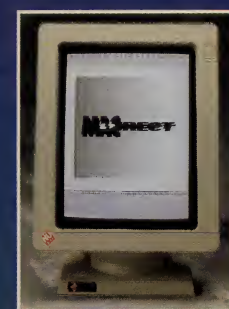
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- Available with 1 Bit interface card for all Mac IIs', SE-30, SE and LC \$488.00.



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RasterOps 21" Color	2,799	Hitachi								
B. SuperMac (SuperMatch) 21"	2,529	Hitachi								
SuperMac 21" Mono/Grayscale	989	—								
C. RasterOps 20" Trinitron Multi-Mode	\$2,329	Trinitron								
Radius Precision Color 20"	2,389	Trinitron								
RasterOps 20" Hitachi Color	1,469	Hitachi								
D. RealTech 20" Trinitron Multi-Mode	1,895	Trinitron								
E. SuperMac 20" (SuperMatch)	1,499	Hitachi								
SuperMac 20" (SuperMatch Dual-Mode)	2,499	Trinitron								
F. NEC 17" 5FG Color	\$1,589	Toshiba								
RasterOps 16" (RasterOps Sweet 16)	1,249	Panasonic								
G. RealTech 17" (RealTech Multi-Mode)	995	Hitachi								
H. Sony 17"	1,189	Trinitron								
I. Seiko Instruments 17" CM1760LR	1,249	Trinitron								
J. Radius Precision Color Pivot 15"	\$959	Non-Trinitron								
K. RealTech 15" Grayscale	449	—								
L. Seiko Instruments 14" CM1445	479	Trinitron								
M. Sony 13" Color	689	Trinitron								

Monitors



PowerBooks



These PowerBook 160s and PowerBook 180s each include: 8 Mb of RAM, expandable to 14 Mb; display with 16 grayscale levels; 1.4 Mb floppy disk drive.

PowerBook® 160

25 MHz 68030. Supertwist display. 40, 80, or 120 Mb hard drive.

PowerBook 160 with 8/40 \$2639
PowerBook 160 with 8/80 2999
PowerBook 160 with 8/120 3359

PowerBook® 180

33 MHz 68030 FPU. Active matrix display. 80 Mb hard drive.

PowerBook 180 with 8/80 \$4319
PowerBook 180 with 8/120 4679

POWERBOOK MEMORY UPGRADES & ACCESSORIES

PowerBook 160 & 180 Memory Upgrades (6/8/10).....\$289/409/499
PowerBook Duo 210 & 230 Memory Upgrades (4/8/12)279/559/809
Auto Power Adapter..... 89

Charger/Reconditioner 169
Auxiliary Power Pack..... 169
Radius PowerView 509
PowerBook Battery.....79

The PowerBook Duo 210 8/80 and PowerBook Duo 230 8/80 transform into desktop computers by using the optional Duo Dock. Each PowerBook Duo 210 or 230 includes:

- 640 x 400 Supertwist liquid crystal display with 16 grayscale levels
- 8 Mb of RAM, expandable to 24 Mb
- EverWatch Battery Saver technology
- Optional internal modem

PowerBook® Duo 210 8/80

\$2,529
Lease: \$69/month

25 MHz 68030 microprocessor. 80 Mb hard drive.
All PowerBooks listed here are equipped with a 19mm trackball.

PowerBook® Duo 230 8/80

\$2,889
Lease: \$79/month

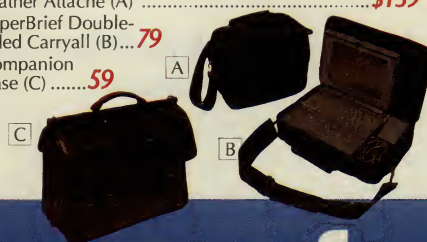
33 MHz 68030 microprocessor. FPU, 80 Mb hard drive.
PowerBook Duo 230 with 8/120.....\$3249

POWERBOOK MODEMS

Global Village PowerPort Gold/Silver/Bronze.....\$459/399/209
MassMicro FM 24/96 PB.....189
Zoom Pocket Modem119

POWERBOOK CARRYING CASES

Leather Attache (A)\$139
SuperBrief Doublesided Carryall (B)....79
Companion Case (C)59



Accelerators

DO YOU FEEL THE NEED FOR SPEED?
CALL US, AND WE'LL MATCH YOU
WITH THE RIGHT ACCELERATOR.

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DAYSTAR DIGITAL
PLI radius

APPLIED ENGINEERING

TransWarp SE (40 MHz w/16-FPU).....\$959
TransWarp LC (25 MHz) 459
TransWarp LC (50 MHz w/50-FPU) ... 1319
TransWarp 040 (25 MHz)..... 1749
1.44 SuperPlus Drive 279
QuadraLink..... 199

DAYSTAR DIGITAL

PowerCache Accelerators
33 MHz Accelerator\$379
40 MHz Accelerator 549
50 MHz Accelerator 719
25 MHz Turbo 040 (IICI,IIIsi)..... 1099
33 MHz Turbo 040 (IICI,IIIsi)..... 1349
FastCache Turbo 25 (040) 259
FastCache Turbo 33 (040) 339
Charger (Photoshop accelerator) 799
PowerCache Adapter40

FUSION DATA

TokaMac IICI.....\$1259
TokaMac IIsi 1259
TokaMac ELC 969

NEWER TECHNOLOGY

Quadra 700 Overdrive\$259
Image Magic NuBus 769
Image Magic FX/PDS 699
Image Magic Quadra/PDS 699

PERIPHERAL LAND

Quick SCSI Accelerator.....\$339

RADIUS

Radius Rocket 25i\$1239
Radius Rocket 33 2069
SCSI-2 Booster 249
Rocket Share.....419

Your one-stop source for Mac solutions.

1-800-364-WEEK

CALL TOLL-FREE IN CANADA:
1-800-972-3018

NETWORKING CARDS & HUBS

Asanté 10T Hub/8 (Ethernet concentrator)

Lets you use inexpensive unshielded twisted-pair (UTP) telephone wire instead of expensive coaxial cable for local area networks.

10Base-T Hub/8\$265



Asanté EN/SC (SCSI-to-Ethernet adapter). For Macs without available slots.

EN/SC\$339

Asanté MacCon 3 Ethernet card. Automatically configures to media used.

MacCon 3 Card\$216

TechWorks GraceLAN Update Manager

GraceLAN for 50 Users\$285

We carry a full line of Asanté and Dayna cards.

DaynaPORT E/II-T NuBus Card

Connects Mac II computers to thick, thin, fiber optic or 10Base-T Ethernet cable systems.

Includes an RJ-45 jack for 10Base-T wiring.

DaynaPORT E/II-T NuBus Card\$149

DaynaPort E/Z. Ideal for Macs that don't have a slot for a network interface card.

DaynaPORT E/Z\$269

Dayna EtherPrint

Divides your network into multiple zones.

Dayna EtherPrint\$335

Dayna EtherPrint Plus\$439



Systems Configured to your specifications

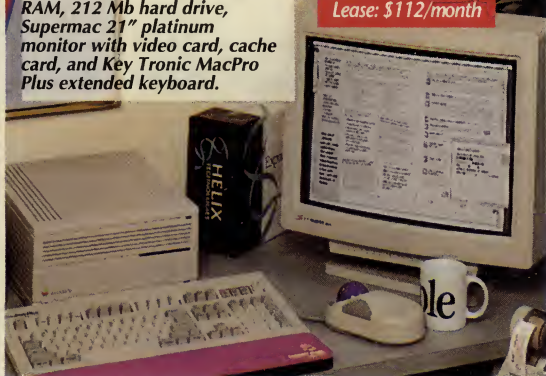
Here are a few of the systems/workstations we sell. We'll let you mix and match your choice of components.

Macintosh IIfx Business Solution

Macintosh IIfx with 5 Mb of RAM, 212 Mb hard drive, Supermac 21" platinum monitor with video card, cache card, and Key Tronic MacPro Plus extended keyboard.

\$4,095

Lease: \$112/month



\$2,729

Lease: \$77/mo.

Mac IIfx Solution



Macintosh IIfx with 5 Mb of RAM, 120 Mb hard drive, Seiko Instruments CM 1445 14" Trinitron monitor, and Key Tronic MacPro Plus extended keyboard.

\$7,849

Lease: \$215/month

Quadra 700/Trinitron Intermediate Graphics Solution

Quadra 700, 8 Mb of RAM, 520 Mb hard drive, RealTech 20" Trinitron monitor w/PaintBoard Li and Key Tronic MacPro Plus extended keyboard.

Hours: 8 am-7 pm Central Standard Time

30-DAY MONEY-BACK GUARANTEE on all hardware (except printer consumables and special-order items). Before returning merchandise, call our Customer Service Dept. toll-free to receive a returned merchandise authorization number (RMA), which must be included with any products you return. No C.O.D. returns, please. Thank you for your cooperation. ALL PRICES ARE SUBJECT TO CHANGE WITHOUT NOTICE.

Scanners

FAX: 1-409-539-4141
CALL: 1-409-760-2400

Toll-free tech support:
1-800-364-MACS

Flatbed desktop scanners for 24-bit color, 8-bit grayscale, and black/white images. Ideal for mid-range output or position prints for mockups/presentations.

	Price	DPI	Brightness & contrast levels	Scanning area	Flat art	Transparencies	Slides	Software
MICROTEK								
Scanmaker II	\$909	600	14	8.5 x 13.5	■			Includes limited version of Adobe Photoshop
Scanmaker IIXE	1,179	600	14	8.5 x 13.5	■			Includes full version of Adobe Photoshop
Scanmaker 1850 Slide Scanner	1,569	1850	14	2.5 square inches		■		Includes full version of Adobe Photoshop
REALTECH								
Scan 800 Optional Adobe Photoshop	\$1,199 200	800	200	8.5 x 11.75	■			Includes Scan-Match color calibration software
Scan 800 with Transparency Option	1,695	800	200	8.5 x 11.75	■	■	■	
UMAX								
UC 630	\$1,119	600	51	8.5 x 14	■			Includes full version of Adobe Photoshop
Transparency Option	729	(600)	(51)	6 x 9	■	■	■	
UC 840	1,289	800	51	8.5 x 14	■			Includes full version of Adobe Photoshop
Transparency Option	729	(800)	(51)	6 x 9	■	■	■	
UC 1200S	3,019	1200	51	8 x 11.8	■			Includes full version of Adobe Photoshop
Transparency Option	729	(1200)	(51)		■	■	■	



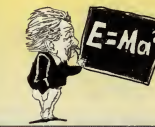
The photo above is a 300 dpi image of an 8 x 10 transparency. It was scanned on the RealTech Scan 800 with Transparency Option, then adjusted with ScanMatch and color-corrected with Adobe Photoshop.

Scanners & Printers

Laser printers

The right printer can do wonders for your productivity. Do you need speed? Adobe PostScript Level 2? Do you need to print a lot of pages each month?

	Dpi	Engine speed RAM	Interpreter Microprocessor	Duty cycle Paper trays	SCSI port Interfaces	Resident fonts Misc.	QMS
NEC Silentwriter Model 95 ★★★★1/2	300 dpi	6 pages/min. 2 Mb RAM (expandable to 5 Mb)	Adobe PostScript Level 2 Motorola 68000 processor	6,000 pages per month Built-in envelope feeder & 250-sheet tray; optional 2nd tray available in letter or legal sizes	No SCSI port Appletalk RS-422, parallel, and RS-232C	35 Micro-fine toner and NEC's patented "Sharp Edge" technology create sharp black print quality	We offer dozens of printers, including the QMS line...too many to show in this ad! If you don't see what you want listed here, please call us.
newgen ★★★★	400 dpi	4 pages/min. 4 Mb RAM (expandable to 16 Mb)	PostScript compatible Weitek XL-8220 processor	3,500 pages per month Optional 2nd paper drawer	Optional SCSI port Appletalk RS-422, parallel, RS-232C	35	NewGen 400P \$1,879 Lease: \$51/month
RealTech ★★★★1/2	300 dpi	9 pages/min. 2 Mb RAM (expandable to 10 Mb)	Adobe PostScript Level 2 Weitek RISC processor	5,000 pages per month Optional 2nd paper tray & cassette feeder are available for \$250 (for both)	SCSI port Appletalk RS-422, parallel, and RS-232C	35 ATM font rendering technology builds raw type characters 4 to 5 times faster, enabling the RealTech Laser to print complex documents faster than other printers in its price range.	RealTech Laser \$1,595 Lease: \$44/month ★★★★1/2 "The RealTech features not just a genuine Adobe interpreter, but also a PostScript Level 2 raster image processor (RIP), which earns it more than a few points for forward compatibility." — PUBLISH MAGAZINE, Feb. 1992. Reprinted from MacUser, Sept. 1992. Copyright ©1992, Ziff Communications Co.
Texas Instruments MicroLaser XL Turbo \$2,795 Lease: \$77/month	300 dpi	16 pages/min. 2.5 Mb RAM (expandable to 10.5 Mb)	Adobe PostScript Level 2 Weitek RISC processor	25,000 pages per month Optional 2nd paper drawer	Optional SCSI port Appletalk RS-422, parallel, and RS-232C	35	TEXAS INSTRUMENTS
Texas Instruments MicroLaser Plus \$1,249 Lease: \$34/month	300 dpi	9 pages/min. 1.5 Mb RAM (expandable to 4.5 Mb)	Adobe PostScript Level 1 Motorola 68000 processor	10,000 pages per month Optional 2nd paper drawer and envelope feeder	Optional SCSI port Appletalk RS-422, parallel, and RS-232C	17 Available with 35 resident fonts (\$1349)	
The only 11x17 printer with Adobe PostScript Level 2 for less than \$3500. RealTech Laser 400 \$3,195 Lease: \$88/mo.	Choice of 300 or 400 dpi	15 ppm (letter size); 8 ppm (tabloid size) 4 Mb RAM (expandable to 16 Mb)	Adobe PostScript Level 2 Weitek RISC processor (and ATM font rendering technology)	20,000 pages per month Two paper trays included (one tray for letter size; one tray for tabloid size.)	SCSI port Three interface ports: Appletalk RS-422, IBM PC parallel, and RS-232C.	35	jeanne is thrilled that she can print proofs of her company newsletter on tabloid-size paper. No more tiling!
QMS 860 Hammerhead \$4,279 Lease: \$117/mo.	600 dpi	8 ppm (letter size); 4.6 ppm (tabloid size) 12 Mb RAM (expandable to 32)	Adobe PostScript compatible Intel 80960CA RISC processor	10,000 pages per month Optional 2nd paper cassette	SCSI port Optional Ethernet	39 fonts	



"Genius level" memory is dynamically allocated and automatically reclaimed.

"...be forewarned: PostScript-clone printers still have a long way to go before they can rival true Adobe PostScript printers."

Quote from MacUser September 1992 issue. "Personal PostScript Printers" by Bruce Fraser.

★★★★ MACWORLD MAGAZINE September 1992



Quantum



GO-Drives have 32k cache, low power consumption, MTBF of 150,000 hours, and ONE Year Warranty. ELS drives have 32k cache, low power consumption, MTBF of 250,000 hours and TWO Year Warranty. LPS drives have 64k-256k cache, MTBF of 250,000 hours, and TWO Year Warranty. PRO drives have 256k cache, MTBF of 150,000 hours, and TWO Year Warranty.

Unformatted Capacity	Model	Access Time	Actual MAC Capacity	Internal	External
GO • DRIVE (2.5" HARD DRIVES DESIGNED FOR NOTEBOOKS)					
80mb	GO80	17ms	80mb	\$325	\$425
120mb	GO120	17ms	120mb	\$435	\$535
ELS SERIES (3.5" LOW PROFILE AND LOW POWER)					
42mb	ELS42	19ms	40mb	\$175	\$235
85mb	ELS85	17ms	82mb	\$215	\$275
127mb	ELS127	17ms	124mb	\$289	\$349
170mb	ELS170	17ms	160mb	\$319	\$379
LPS SERIES (3.5" LOW PROFILE)					
105mb	LPS105	11ms	100mb	\$255	\$315
240mb	LPS240	10ms	234mb	\$439	\$499
525mb	LPS525	10ms	500mb	\$939	\$999
PRODRIVE SERIES (3.5" HALF HEIGHT)					
425mb	PRO425	9ms	406mb	\$879	\$939
700mb	PRO700	10ms	670mb	\$1195	\$1255
1.0GIG	PRO1050	10ms	1001mb	\$1365	\$1425
1.2GIG	PRO1225	10ms	1165mb	\$1595	\$1655

*6300 RPM!!

Maxtor



Unformatted Capacity	Model	Access Time	Actual MAC Capacity	Internal	External
XT SERIES (3.5" LOW PROFILE)					
120mb	7120S	15ms	121mb	\$259	\$319
207mb	7213S	15ms	202mb	\$379	\$439
LXT & MXT SERIES (3.5" HALF HEIGHT)					
330mb	LXT-340	15ms	324mb	\$625	\$685
FAST!! 535mb*	MXT-535	8.5ms	521mb	\$999	\$1059
FAST!! 1240mb*	MXT-1240	8.5ms	1150mb	\$1659	\$1719
PANTHER SERIES (5.25" FULL HEIGHT)					
1.2GIG	PO-12S	13ms	997mb	\$1419	\$1519
1.7GIG	P1-17S	13ms	1433mb	\$1719	\$1819

Maxtor 3.5" drives carry a ONE Year Warranty. Maxtor 5.25" drives carry a TWO Year Warranty.

FIVE YEAR WARRANTY

FUJITSU



Unformatted Capacity	Model	Description	Access Time	Actual MAC Capacity	Internal	External
425mb	M2623FA	3.5" Half Height	9ms	405mb	\$895	\$955
520mb	M2624FA	3.5" Half Height	9ms	496mb	\$945	\$1005
NEW 1.1GIG	M2694	3.5" Half Height	8.5ms	995mb	\$1795	\$1895
1.2GIG	M2266	5.25" Full Height	14.5ms	1029mb	\$1395	\$1495
2.0GIG	M2652	5.25" Full Height	14.5ms	1665mb	\$2295	\$2395
NEW 2.4GIG	M2654	5.25" Full Height	11.5ms	2000mb	\$2519	\$2619

Seagate

FREE ATTO SCSI-2 CONTROLLER CARD
WITH ELITE DRIVE PURCHASE
(WHILE SUPPLIES LAST)



Unformatted Capacity	Model	Description	Access Time	Actual MAC Capacity	Internal	External
3.5" DISK DRIVES						
248mb	ST3283N	Low Profile	12ms	235mb	\$479	\$539
1.2GIG	ST11200N	Half Height	10.5ms	1000mb	\$1535	\$1595
WREN AND ELITE SERIES (5.25" FULL HEIGHT)						
645mb	ST4767N	Wren Runner II	11.9ms	634mb	\$1519	\$1619
1.2GIG	ST41200N	Wren-7	15ms	989mb	\$1375	\$1475
1.6GIG	ST41651N	Wren-8	15ms	1350mb	\$1715	\$1815
2.1GIG	ST42100N	Wren-9	12.9ms	1900mb	\$1935	\$2035
1.6GIG	ST41600N	Elite-1	11.5ms	1307mb	\$1999	\$2099
2.4GIG	ST42400N	Elite-2	11ms	2050mb	\$2879	\$2979
3.4GIG	ST43400N	Elite-3	11ms	2750mb	\$3929	\$4029

Seagate drives carry a ONE Year Warranty.

HEWLETT PACKARD

FIVE YEAR WARRANTY



Unformatted Capacity	Model	Access Time	Actual Mac Capacity	Internal	External
3.5" HALF HEIGHT DRIVES					
234mb	C2233	12.6ms	223mb	\$799	\$859
422mb	C2235	12.6ms	402mb	\$1049	\$1109
1.2GIG	C2247	10.5ms	1000mb	\$1955	\$2015
5.25" FULL HEIGHT DRIVES					
677mb	97556	13.5ms	633mb	\$1465	\$1565
1.2GIG	97558	13.5ms	1020mb	\$1665	\$1765
1.6GIG	97560	13.5ms	1292mb	\$1995	\$2095
2.4GIG	CP3010	11.5ms	2000mb	\$2999	\$3099

ASK ABOUT DiVA VideoShop CARTRIDGE BUNDLE



ClubMac 88c will allow you to read and write both 44mb and 88mb cartridges. Finally, there's one simple solution. Buy the drive that will offer complete compatibility with all SyQuest based cartridges. Buy the ClubMac 88c.



ClubMac SyQuest Dual Drives offer users the most convenient way to exchange data between cartridges.



Internal SyQuest Technology, essential for every Quadra 900/950, Ilvix, Ilvi and Performa 600 user, is available from ClubMac TODAY!

CLUBMAC 88c REMOVABLES*

ClubMac 88c External (SQ5110C)	\$589
ClubMac 88c Internal	\$559
ClubMac 88c Dual	\$1079

* ClubMac 88c will read and write 44mb cartridges, but will not format 44mb cartridges.

CLUBMAC 44MB REMOVABLES

ClubMac 44mb External (SQ555)	\$385
ClubMac 44mb Internal	\$345
ClubMac 44mb Dual	\$725

CLUBMAC 88MB REMOVABLES

ClubMac 88mb External (SQ5110)	\$489
ClubMac 88mb Internal	\$469
ClubMac 88mb Dual	\$895

SYQUEST CARTRIDGES

44mb Cartridge	\$63
88mb Cartridge	\$97

NEW
SyQuest 88c

FEATURING



SyQuest[®]
REMOVABLE
TECHNOLOGY

SyQuest Drives include

- TWO Year Warranty
- One cartridge and necessary cables
- SCSI Director™ Formatting Utility

SyQuest Cartridges carry a ONE Year Warranty.

CONNER

Unformatted Capacity	Model	Description	Access Time	Actual MAC Capacity	Internal	External
85mb	CP30080E	3.5" Low Profile	17ms	82mb	\$225	\$285
120mb	CP30100	3.5" Low Profile	19ms	116mb	\$279	\$339
170mb	CP30170E	3.5" Low Profile	15ms	160mb	\$315	\$375
212mb	CP30200	3.5" Low Profile	12ms	206mb	\$425	\$485
540mb	CP30540	3.5" Half Height	8.5ms	515mb	\$979	\$1039

Conner drives carry a ONE Year Warranty.

**FIVE
YEAR
WARRANTY**

MICROPOLIS

Unformatted Capacity	Model	Description	Access Time	Internal	External
1.0GIG	2112	3.5" Half Height/Fast SCSI-2	10ms	\$1699	\$1759
2.0GIG	1924	5.25" Full Height/Fast SCSI-2	11.5ms	\$2849	\$2949

GREAT Media PRICES

60 meter DAT	\$13
90 meter DAT	\$16
CT600N	\$19
CT600F	\$28
Exabyte 8mm	\$18

ClubMac TAPE BACKUP Systems



Capacity	Model	Description	Media	Internal	External
155mb	Teac MT2ST/N50	Analog	CT600N	\$469	\$489
600mb	Teac MT2ST/F50	Analog	CT600F	\$669	\$689
2.0GIG	ARDat	DAT, DDS	4mm	\$1165	\$1185
2.0GIG	WangDAT 1300XL	DAT, DDS	4mm	\$1249	\$1269
3-5GIG	WangDAT 3200	DAT, DDS-DC	4mm		\$1489
2.0GIG	HP 35470A	DAT, DDS	4mm	\$1329	\$1349
3-5GIG	HP 35480A	DAT, DDS-DC	4mm	\$1529	\$1549
2.2GIG	Exabyte EXB-8200	Digital/Helical	8mm		\$1859
5.0GIG	Exabyte EXB-8500	Digital/Helical	8mm		\$2849

Tape BackUp Systems include RetroSpec v.1.3c Backup Software, ONE cartridge and ONE Year Warranty.

ClubMac OPTICAL Drives



Model	Capacity	Description	Seek	External
CMO-OD3000 Teac	128mb	3.5" Half Height	45ms	\$999
CMO-LF3004 Panasonic	128mb	3.5" Half Height	45ms	\$1129
CMO-3100E Ricoh	128mb	3.5" Half Height	45ms	\$1089
CMO-5031E Ricoh	594/652mb	5.25" Full Height	28ms	\$2385
Tahiti II MaxOptix	650mb/1.0GIG	5.25" Full Height	35ms	\$3269
128mb Cartridge	3.5" Single Sided			\$39
594/652mb Cartridge	5.25" 512/1024 bytes/sec			\$99

All ClubMac Opticals include ONE cartridge and ONE Year Warranty.

ClubMac

1-800-258-2622

3 Musick • Irvine, CA 92718

Sales, Info, Int'l (714)768-8130

Tech Support (714)768-1490

24-Hour Fax (714)768-9354

1-800-258-2622

1-800-CLUBMAC

1-800-258-2622

HP SCANJET IIc COLOR SCANNER

\$1295



- 400 dpi (800 dpi via interpolation) single-pass scanning delivers superior image quality in both 24-bit color and 8-bit grayscale modes
- Exclusive HP AccuPage technology improves OCR accuracy
- Both image and text scanning mean maximum versatility
- Print-path calibration optimizes scan settings for selected printer
- Automatic Document Feeder \$499

HP SCANJET IIp GRAYSCALE SCANNER \$695

- 300dpi optical resolution delivers accurate, detailed scans
- 8-bit grayscale provides high-quality reproductions of photographs and illustrations
- Exclusive HP AccuPage technology improves text recognition and formatting
- Print-path calibration optimizes scan setting for selected printer
- Automatic Document Feeder \$279



hp HEWLETT PACKARD
Authorized Scanner Dealer

EPSON

EPSON ES-600C

- 300 X 300 dpi optical resolution, 1200 dpi via interpolation
- Epson's TruePass Scanning System (single or multi-pass)

ES-600C with ScanTastic **\$945**

ES-600C with Full Photoshop & ScanTastic **\$1215**

EPSON ES-800C

- 400 X 400 dpi optical resolution, 1600 via interpolation
- Epson's TruePass Scanning System (single or multi-pass)

ES-800C with ScanTastic **\$1229**

ES-800C with Full Photoshop & ScanTastic **\$1499**

Automatic Document Feeder **\$465**

Transparency Unit **\$765**

Bundled with
ADOBE PHOTOSHOP
and
ScanTastic



MICROTEK

Bundled with
ADOBE PHOTOSHOP



SCANMAKER II \$899

- Up to 1200 dpi resolution via interpolation
- 24-bit color/8-bit grayscale
- Bundled with Adobe Photoshop LE

SCANMAKER IIx \$1179

- Up to 1200 dpi resolution via interpolation
- 24-bit color/8-bit grayscale
- Bundled with FULL Adobe Photoshop

Auto Document Feeder **\$479**

DAYSTAR DIGITAL

33 MHZ TURBO 040 \$1429
FASTCACHE TURBO 33-128K ADAPTER \$359
CHARGER \$859

POWERCACHE
(Classic, SE, LC, SE/30, II, IIX, IIcx, IIxi, IIxi, IIvx, Performas)

	w/o FPU	w/ FPU
33 MHz PowerCache*	\$385	\$475
40 MHz PowerCache*	\$555	\$645
50 MHz PowerCache*	\$729	\$859
Equalizer LC	\$169	\$239
PowerCache Adapter	\$40	

MEMORY...

STANDARD MAC

1mb X 8 SIMMS	\$31
2mb X 8 SIMMS	\$62
4mb X 8 SIMMS	\$129
4mb X 8 with PAL SIMMS	\$135
8MB SIMMS	\$279
8MB SIMMS for Q700	\$299
16mb X 8 SIMMS	\$515
16mb Low Profile SIMMS	\$565

MAC IIFX

1mb X 8 SIMMS	\$36
4mb X 8 SIMMS	\$119
8mb SIMMS	\$285
16mb SIMMS	\$549

CENTRIS 610/650

4MB Memory Module	\$149
6MB Memory Module	\$299
10MB Memory Module	\$615

VIDEO RAM

256K VRAM for Quadras	\$25
512K VRAM for LC, LCII, IIvx	\$49



100% Compatible

33MHz TURBO 040

100% compatible with any software that runs on a Quadra and any hardware that runs on a Mac Ili.

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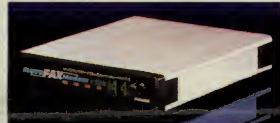
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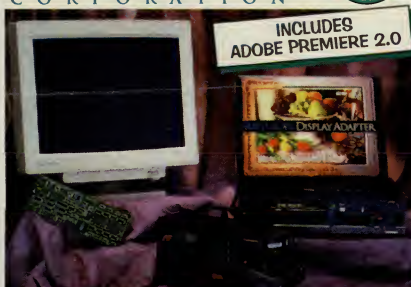
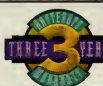
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Etherprint Plus Multi Dev Sprt Built-in Thin BNC & AUI Port	\$425
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Etherprint-T ENET to LocalTalk Convert Built-in 10BT	\$325
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FNTKA Thick FriendlyNet Media Adapter	\$79
FN10TA 10BaseT FriendlyNet Media Adapter	\$79
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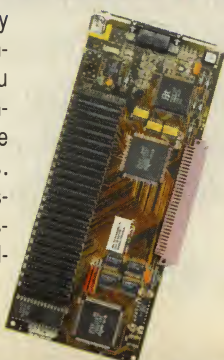
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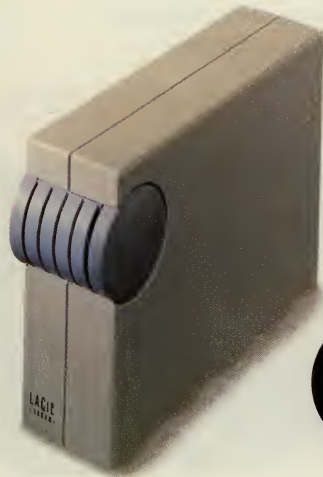
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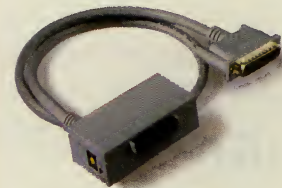
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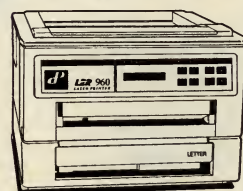
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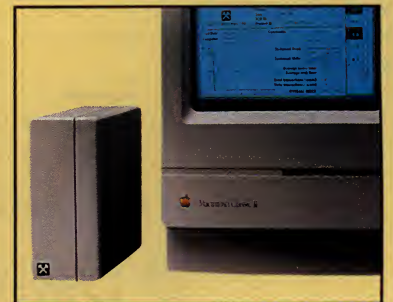
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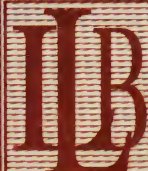
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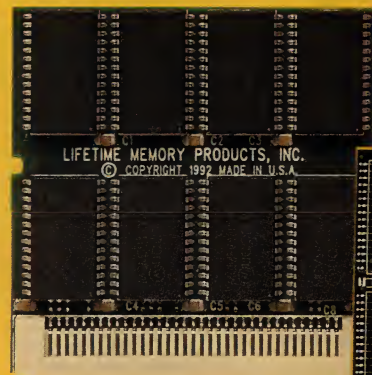


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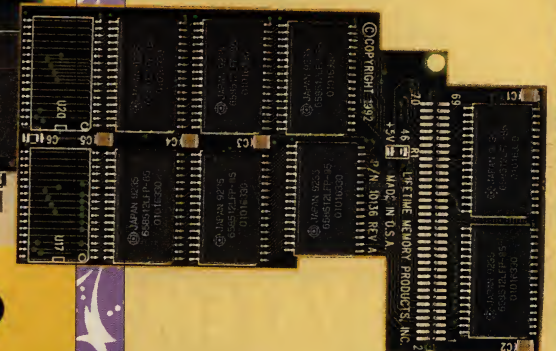
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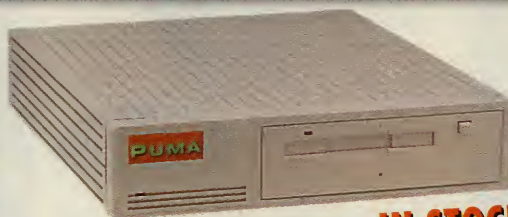
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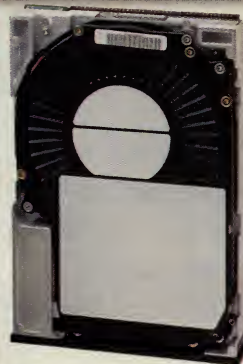
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MACINTOSH IIX	•			•									
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MACINTOSH IICI	•	•		•		•			•				
MAC CLASSIC	•		•										
MAC CLASSIC II	•	•		•									
MAC LC, LC II	•	•		•									
MACINTOSH IISI	•	•		•		•			•				
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QUADRA 700	•			•									
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POWERBOOK 100		•		•	•								
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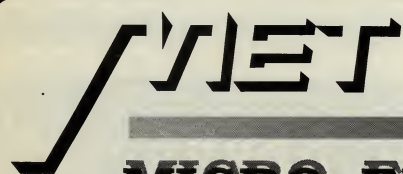
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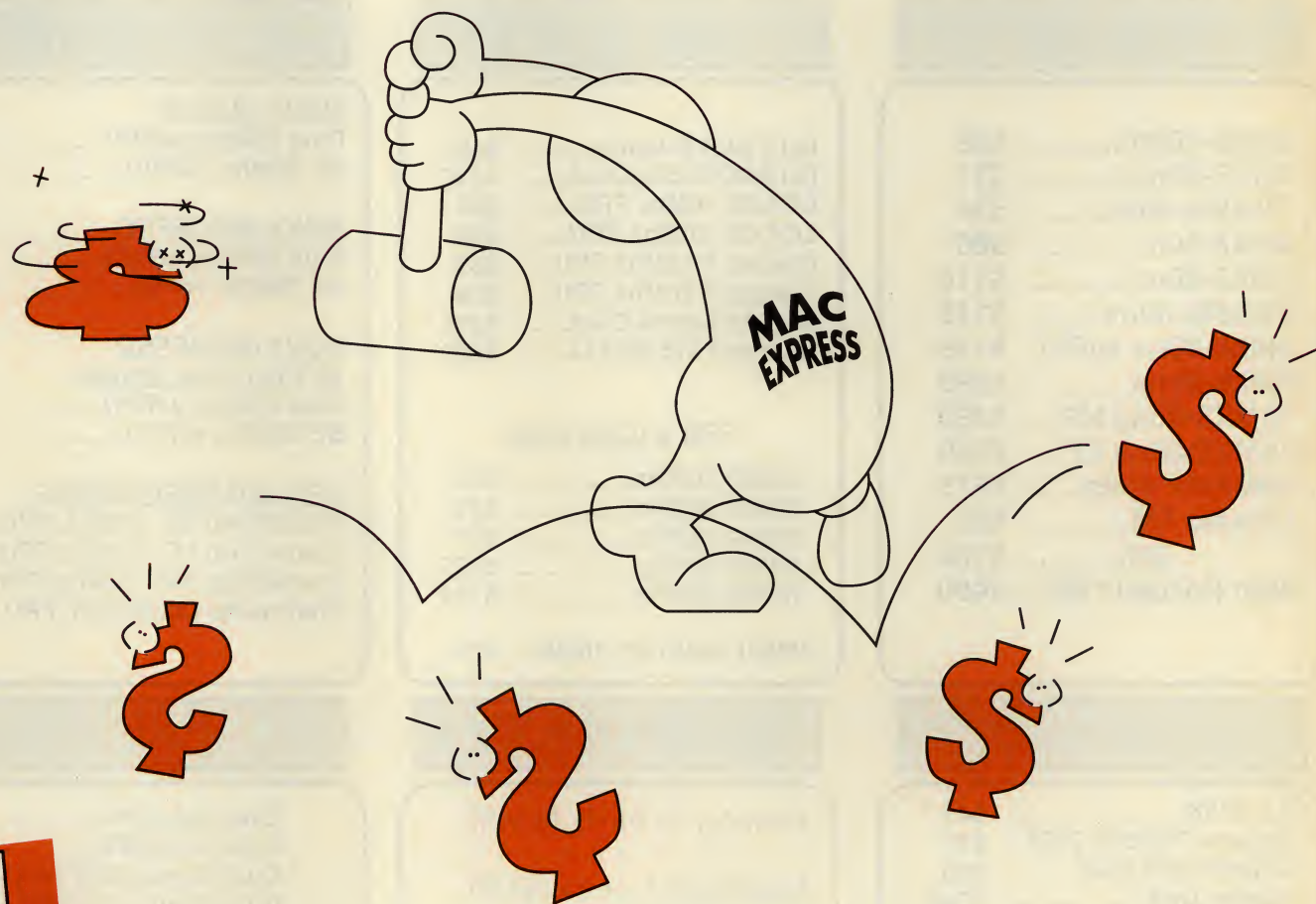
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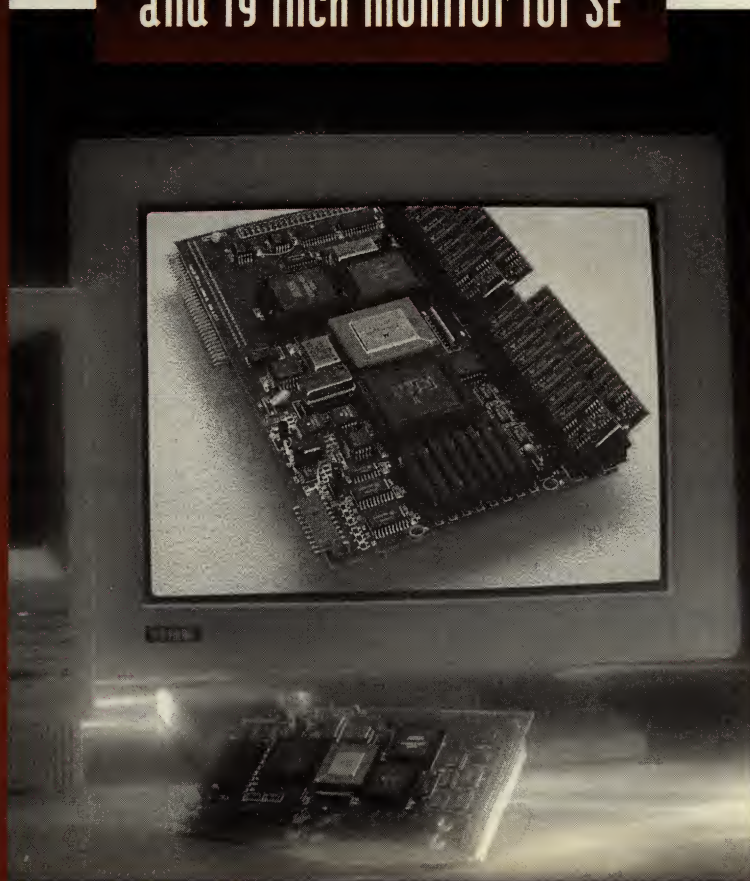
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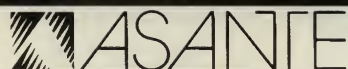
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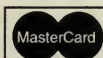
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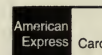
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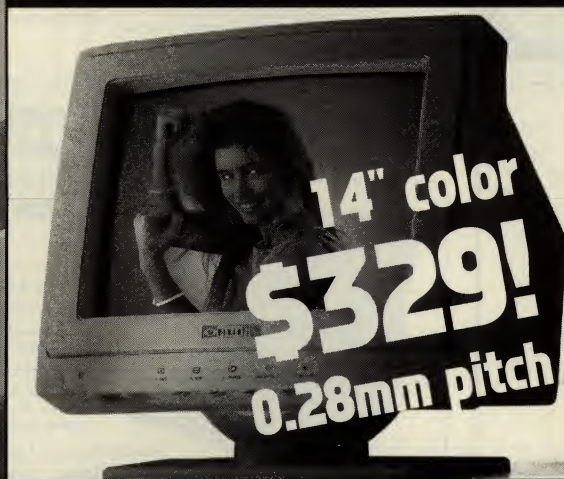
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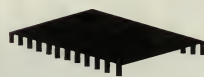
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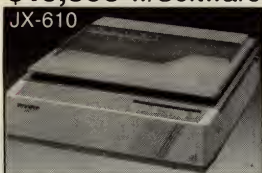
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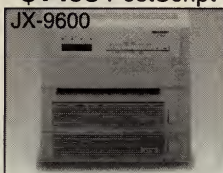
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185 Mb 3 yr. warr.	\$335	\$405
520 Mb 5 yr. warr.	899	969
1.2 Gb 5 yr. warr.	1299	1399
1.2 Gb 3.5" 5 yr. warr.	1759	1819
212 Mb, 12 MS Fast	425	485
2.4 Gb 5 yr. warr.	2549	2649

CONNER

Capacity	Int.	Ext.
85 Mb, LPS	\$225	\$285
120 Mb, LPS	279	339
170 Mb, LPS	320	380
2.06 Gb 5 yr. warr.	2125	2225
540 Mb	980	1040

Conner Drives Are Apple Authorized.

TOSHIBA

Capacity	Int.	Ext.
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877 Mb 12MS, 3.5"	1085	1155

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PDI 44 Mb	\$389
PDI 88 Mb	489
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1.2 Gb	ST41200N	1379	1479
1.6 Gb	ST41600N	1999	2099
2.1 Gb	ST42100N	2059	2159
2.4 Gb	ST42400N	2899	2999

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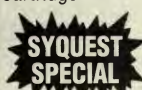
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88 MBC w/Cartridge	\$599
Cartridge	\$99



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w/Cartridge \$425
Cartridge \$64

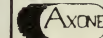
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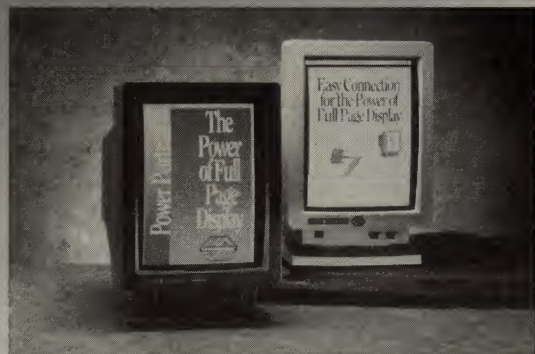
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• (ms)

• Ext.

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17

\$215

\$275

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PRO700

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\$1365

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Asanté MacCon3 - 64K 199
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Asanté MacCon+ - 64K 159
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Asanté FriendlyNet Adapters 79
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Asanté 10BaseT Hub/8 239
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AsantéHub 1012 1,379
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Asanté Print 349
An inexpensive Ethernet-to-LocalTalk converter that easily connects one or two LocalTalk peripherals to an Ethernet network. With no switches to set or installation software to load, it is smart enough to work right out of the box. Thick/Thin or Thick/10BaseT.

TechWorks Ethernet Cards 99
We made a special purchase of TechWorks Ethernet NuBus cards and are offering them on a first-come-first-served basis. Limited to supply on-hand.

Tribe LocalSwitch 1,499

LocalSwitch is a 16-port intelligent packet-switching hub for Macintosh networks. Using standard LocalTalk protocol and twisted pair wiring, LocalSwitch processes many network transmissions simultaneously.



\$1,499 Tribe LocalSwitch

Modems

SupraFAX Modem Plus 2,400 199
2,400 bps Modem/9,600 send-receive FAX. v.42bis data compression for up to 9,600 bps data.



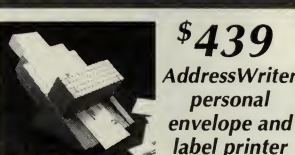
SupraFAX Modem v.32bis 14,400 ... 349
14,400 bps Modem/9,600 send-receive FAX. v.42bis compression for up to 57,600 bps data.

All SupraFAX modems include STP and MicroPhone software, cable and have a 3-year Warranty.

Quicktel 2400/9600 FAX/Modem ... 139
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Quicktel v.32bis 14,400 299
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AddressWriter Printer 439
144 x 144 impact dot-matrix print head. Optional label feeder will handle a variety of pin-fed labels for added convenience and value. Specify voltage.



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LabelWriter II Mac 179
Handles up to 350 labels per roll. Maximum label size: 1-1/8" x 3-1/2". Prints one label in 3-1/2 secs.

LabelWriter II Plus Mac 249
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Tamarack 600 Color Scanner:
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Slide Attachment (shown) 549
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PhotoShop 2.0 (full version)* 199

Relax Color: (Epson Engine)

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300 dpi - 220 VAC 1,099
Color Studio LE (limited version)* 79
Color Studio 1.5 (full version)* 159

Umax Color Scanners:

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UC1200S** - 8.5" x 14"
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Relisys Color Scanner:

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The Sharp JX-320 is the first color scanner fully compliant with the new SCSI-2 standard which eliminates the need for special drivers.

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Sharp JX-320 Color Scanner 999

Transparency Option JX-32F3 799

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5-1/4" Full Height - WREN			
1.0 Gig. - ST41200N, 15 ms. ...	1,239	1,299	
1.4 Gig. - ST41651N, 15 ms. ...	1,739	1,799	
1.9 Gig. - ST42100N, 12.9 ms. ...	1,839	1,899	
5-1/4" Full Height - ELITE Ultra-High Performance			
1.4 Gig. - ELITE-I, 11.5 ms.	1,839	1,899	
2.1 Gig. - ELITE-II, 11 ms.	2,539	2,599	
3.5 Gig. - ELITE-III, 11 ms.	3,439	3,499	

Fujitsu	3-1/2" Half Height	Internal	External
520 Meg. - 2624FA, 9 ms.	939	999	
5-1/4" Full Height			
1.2 Gig. - 2266SA, 11.5 ms.	1,539	1,599	
2.0 Gig. - 2652SA, 11.5 ms.	2,439	2,499	

Maxtor	3-1/2" Low Profile/Low Power	Internal	External
120 Meg. - 7120S, 15 ms.	279	339	
213 Meg. - 7213S, 15 ms.	399	459	
5-1/4" Full Height			
645 Meg. - XT8760, 16.5 ms. ...	1,299	1,359	
1.7 Gig. - Panther, 13 ms.	1,799	1,859	

Quantum	3-1/2" ELS Low Profile	Internal	External
42 Meg. - ELS42, 19 ms.	189	249	
85 Meg. - ELS85, 17 ms.	239	299	
127 Meg. - ELS127, 17 ms.	299	359	
2-1/2" - Internal for the Mac PowerBook only			
80 Meg. - Go*80, 17 ms.	329	429	
120 Meg. - Go*120, 17 ms.	459	559	
3-1/2" PDS, PRO & LPS Series			
240 Meg. - LPS240, 10 ms.	499	559	
525 Meg. - LPS525, 10 ms.	939	999	
1.0 Gig. - PD1050S, 11 ms.	1,439	1,499	
1.2 Gig. - PD1225S, 11 ms.	1,699	1,759	

Conner	3-1/2" Half Height	Internal	External
42 Meg. - CP-3040, 25 ms.	179	239	
85 Meg. - CP-30080E, 17 ms.	239	299	
120 Meg. - CP30100, 19 ms.	279	339	
170 Meg. - CP-30170E, 17 ms.	339	399	
212 Meg. - CP-30200, 12 ms.	399	459	
545 Meg. - CP-30540, 8.5 ms.	999	1,059	

Hewlett Packard	3-1/2" Half Height	Internal	External
422 Meg. - HP2235, 12.6 ms. ..	1,139	1,199	
1.2 Gig. - HP2247, 12.6 ms.	1,739	1,799	
5-1/4" Full Height			
1.2 Gig. - HP97558, 13.5 ms. ..	1,639	1,699	
1.6 Gig. - HP97560, 13.5 ms. ..	2,199	2,259	

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FreeLance Drives:

80 Meg. FreeLance Go*Drive 429
120 Meg. FreeLance Go*Drive 559
160 Meg. FreeLance Go*Drive Call
Includes your choice of 110V or 220V power supplies and a PowerBook or standard Macintosh SCSI cable.

FreeLance Dock, Battery & Charger 229

This is a complete package, including your choice of 110V or 220V charger, a PowerBook 140-180 compatible battery, transportable power cable and SCSI cable. Use the FreeLance Dock on-the-go or in the office. The battery is interchangeable with the PowerBook's. You can even fully recharge your PowerBook's battery in just 45 minutes while you're working.

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PowerBook Battery - 140-180 49
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SCSI Cable - DB25M/Cent50M 19
Adapter - DB25M/HDI30 19

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Featuring the Texel DM3024. This is a performance drive with 235 ms average access and double the normal speed - 300 Kbytes/sec. data transfer. Kodak compatible!

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NEC



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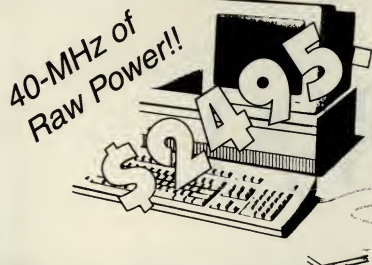
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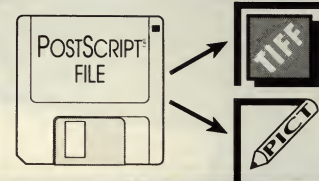
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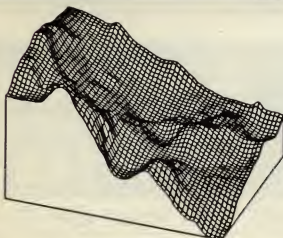
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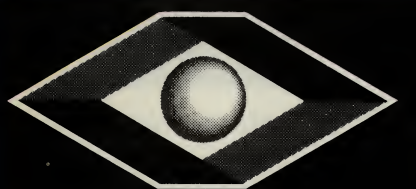
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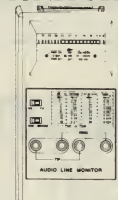
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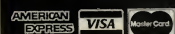
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FPU

From Page 1

By offering the Centris with the 68LC040, Apple decreased its cost. A single 68LC040 is about \$158 less on the street than a 68RC040. The Centris 610 4/80 configuration with one slot and no FPU lists for \$1,859. A Centris 650 4/80 with three NuBus slots, one processor direct slot and no FPU costs \$2,699. An additional \$490 buys a Centris 650 8/80 with Ethernet and the FPU. If you plan on buying the lower-end model; can do without the slots; and will upgrade the memory, network capability and disk yourself, one question remains: Do you need the FPU and at what cost?

Since, until last October, the IIsi

was the only Mac with an optional FPU, the question of needing one hasn't been pressing. The introduction of the FPU-less Centris should change that, according to Steve Holmland, product manager for Radius Inc.'s Rocket 68040 accelerator boards.

"Instead of hundreds of people asking the question, it should now be thousands," he said. San Jose, Calif.-based Radius introduced versions of its Rocket with and without FPU last year, and customers wanted to know which to buy. "Trying to find out which programs use an FPU required going through 10 or 12 people at each company," Holmland said, and there wasn't always a good answer.

Bill Coon, vice president of sales

and marketing at accelerator maker Fusion Data Systems Inc. of Austin, Texas, agreed and said Fusion performed its own tests to find applications that benefited from an FPU. The results, he said, indicate few applications use an FPU for all their math functions. "It's not so much a matter of determining FPU usage on an application-by-application basis but on a function-by-function basis."

Fusion found that Microsoft Excel was markedly faster when an FPU was available. Recalculation of a 20,000-cell spreadsheet was 2.5 to 3.2 times faster depending on the types of functions used. Dan Williams, Excel product manager, confirmed that versions 3.0a and 4.0 have "broad support for the FPU. While we use an FPU for even basic math functions, you should really see a major improvement when you use transcendental functions like square root, log and exponent."

Tests with Adobe Photoshop 2.0, Aldus FreeHand 3.0 and PageMaker 4.0.1, Claris Corp.'s FileMaker Pro 1.0.2, and QuickTime movie playback and PICT compression showed no performance increases with an FPU.

According to Fusion's Coon, virtually all 3-D rendering applications require an FPU. Most graphics packages use an FPU for only a few functions; Photoshop, for example, doesn't use an FPU, but some of its plug-ins do. Word processors and page-layout applications don't access an FPU, he said. □

FPUs and application performance

APPLICATION	WITHOUT FPU	WITH FPU
Excel 3.0a floating-point calculations	12.72	5.15
Excel 3.0a sine equations	13.59	4.25
Photoshop 2.0 CMYK color separation	26.98	26.04
FreeHand 3.0 Fit in Window	13.53	13.42
PageMaker 4.0 Fit in Window	3.31	3.35
FileMaker Pro 1.0 Sort	24.54	24.09
QuickTime 180x120 movie playback	10.0 fps	10.0 fps
PICT compression	5.07	5.05

Source: Fusion Data Systems. All times in seconds except as noted.

Cyclone

From Page 1

al high-fidelity microphone.

The system, according to Apple documents, is based on a speech-recognition engine now officially called MacPlainTalk. It reportedly will recognize speech from any adult speaking North American English, with no prior training required. Users will be able to speak in natural phrases rather than in single words separated by pauses, and the system will automatically adapt to changes in background noise.

► **Speech synthesis.** The two new models will talk as well as listen. A new system facility called the Speech Manager will convert text strings sent by applications to phonemes and then pass them to a speech synthesizer, which in turn will look up the proper pronunciation in an extensible dictionary and generate the actual audio output via a new custom application-specific integrated circuit (ASIC) called Singer.

From a control panel users will be able to select among multiple voices, depending on the synthesizers installed. The default synthesizer Apple will provide, code-named Gala Tea, is expected to support several male, female and child voices (see MacWEEK, May 11, 1992). Features include the ability to read

numbers and fractions properly, such as "nineteen-ninety-three" instead of "one, nine, nine, three."

As previously reported, both new models will include an AT&T 32-bit DSP that will handle video and 16-bit sound, including telephony. The Cyclone will include a 40-MHz '040, three NuBus slots and support for up to 128 Mbytes of RAM. The Tempest will use a 25-MHz LC040, lacking an FPU (floating-point unit), and hold up to 68 Mbytes of RAM; it will have a single slot that will require a NuBus adapter and have room for only 7-inch NuBus cards. Users will be able to update the Tempest's processor but not the Cyclone's.

The new systems will incorporate a slew of design innovations and new ASICs. The I/O subsystem will provide direct memory access between peripheral devices and the main processor buses, allowing improved throughput without processor intervention. A new SCSI Manager and DMA Serial Driver will offer improved performance now and modular designs that easily can be adapted to future hardware.

A new NuBus controller called MUNI (Macintosh Universal NuBus Interface), built into the Cyclone and on the Tempest's optional adapter, will implement the NuBus 90 standard, including

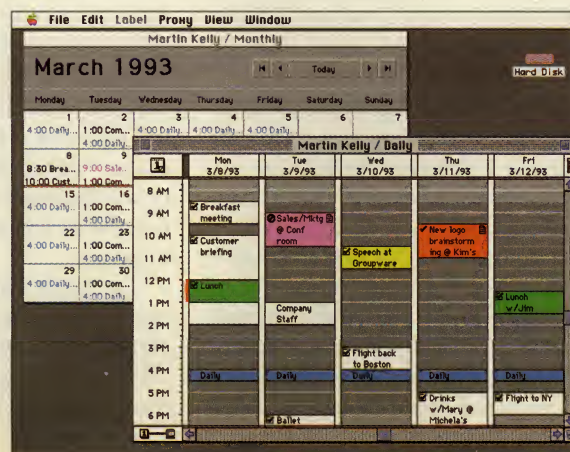
block transfers and data burst to and from the main processor bus.

Both systems will offer video output in a variety of formats, including NTSC and PAL (European) composite and S-video. The Cyclone will support color depths of up to 32 bits for graphics and 16 bits for video; the Tempest is limited to 16 bits. □

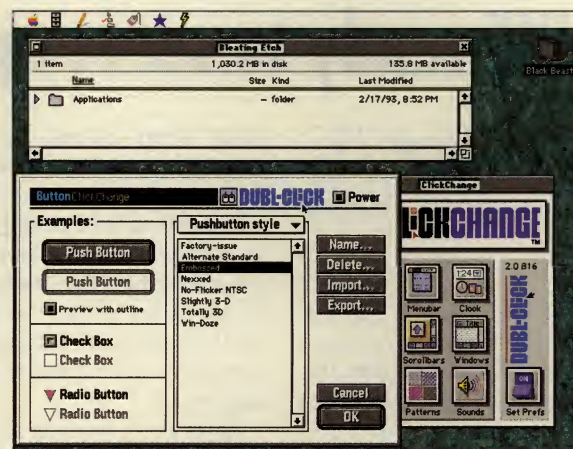
Meeting Maker From Page 1

Meeting Maker XP's new features include:

► **Monthly calendars.** Users will be able to view detailed monthly calendars in addition to the daily versions. Version 1.5 includes monthly views, but they show only thumbnail



The cross-platform version of Meeting Maker from ON Technology will include a monthly scheduling option and a distributed architecture that allows users to see and modify schedules while off the network.



ClickChange, a utility that lets users customize the look of their Macs, adds the ability with Version 2.0 to substitute a variety of 3-D, colorful buttons for the standard Mac push, radio and check box buttons.

ClickChange util gets face lift

By Robert Hess

Woodland Hills, Calif. — Dubl-Click Software Inc. this week will ship Version 2.0 of ClickChange, its utility for customizing a user's Mac interface. New features in the \$89.95 product include:

► **Cursors.** Colorized and animated images can replace the standard arrow, watch, I-beam, plus and cross cursors.

► **Menu bar.** Color icons can replace menu titles in the menu bar. In addition to a more lighthearted interface, this allows room for more menus on small menu bars.

► **Clock.** A menu bar clock with date, time and alarm can be displayed in any font, color and style.

► **Buttons.** A variety of 3-D, colorful buttons can replace the standard push, radio and check box buttons.

► **Scrollbars.** The directional buttons of scroll bars can take on a variety of styles similar to those on other platforms such as Windows and NeXT. Double-headed arrows and proportional elevators also may be used.

► **Windows.** Much like the Scrollbars feature, the window styles

of many other platforms can replace the standard Mac window style.

► **Sound.** Sounds can be attached to a wide variety of events, such as saving files or printing; many can be played asynchronously.

With ClickChange 2.0, users can modify the colors of all elements, including menu titles and button text, and modify the patterns of scroll bars and the desktop. ClickChange 2.0 can import patterns from Wallpaper, Thought I Could's desktop-decorating utility.

Dubl-Click also released ClickTracks, a collection of sounds, including celebrity impersonations, to be used with ClickChange's Sound module. ClickTracks will ship as a separate product for \$49.95 next month and will include the Sound module from ClickChange.

ClickChange and ClickTracks together are \$109.95. Upgrades are \$25 for just ClickChange or \$40 for the bundle.

Dubl-Click is at 22521 Styles St., Woodland Hills, Calif. 91367. Phone (818) 888-2068 or (800) 266-9525; fax (818) 888-5405. □

just minutes before an event occurs.

► **Group to-do's.** Users will be able to send a request to others to complete a specified task. Clicking an accept button will add the task to a user's to-do list.

Meeting Maker XP will ship with Mac and Windows client and server versions in each box. ON provides an IPX (Internetwork Packet Exchange) driver for use in mixed environments and will support Novell's forthcoming MacIPX driver.

The company said it will add multiserver support to Meeting Maker XP later this year. The multiserver version will include directory services built on top of AOC (Apple Open Collaboration Environment) and Novell NetWare 4.0 directory services.

ON Technology Inc. is at 155 Second St., Cambridge, Mass. 02141. Phone (617) 876-0900; fax (617) 876-0391. □

Apple PIE ready to serve up consumer CD players

*One device for Mac or TV,
other to run ScriptX media*

By MacWEEK staff

Cupertino, Calif. — Apple's Personal Interactive Electronics division is readying a variety of CD-ROM multimedia players that will output text, graphics and QuickTime clips to a Mac or a television.

Apple officials have talked since last spring about a handheld CD-ROM player, which John Sculley called Sweet Pea (see MacWEEK, June 29, 1992). That device, which will run Kaleida Labs Inc.'s ScriptX cross-platform multimedia operating system and scripting language, is expected to ship by fall for about \$1,000.

Some sources doubted that Kaleida will have ScriptX ready in time to meet Apple's schedule. But they also said Apple has a variety of alternative scripting environments for the player under development and already shipping.

Sweet Pea reportedly will sport a black-and-white LCD screen with a resolution of 640 by 400 pixels at 100 dpi. It also will provide NTSC and PAL (European)

color video output, enabling users to connect it to a television to play multimedia titles.

In addition, the 3-pound player will have an on-board infrared receiver that enables the use of untethered keyboards and joysticks. A PCMCIA slot will let users install additional RAM, applications, hard drives, and perhaps even network and communications interfaces, sources said.

Apple also is working on a second, screenless generation of multimedia devices, which will interface to a Mac and an NTSC or PAL television. These players will display images from multisession Eastman Kodak Co. Photo CDs. A SCSI port will allow Macs to

control playback functions or transfer files to a hard disk.

Sources said these devices will be tailored to support specific markets, including business, schools and home. They also may play a role in PIE's Apple Online Services program announced last week at the mobile93 conference in San Jose, Calif. (see story, Page 1). Sources said the large volume of storage provided by CD-ROM will let Apple develop very rich front ends to its on-line information services.

For instance, certain events during an AppleLink session might trigger a QuickTime clip, display a graphic or play a sound, which would reside on a CD-ROM. □

AppleLink

From Page 1

tors such as Prodigy and CompuServe.

In hopes of catching up, Apple soon will offer access to the on-line marketplace from Windows and Newton as well as the Mac.

The first stage in the AppleLink renovation will be finished by this spring, Apple said, when a new interface, based on America Online's software, will be rolled out.

Sculley said the new services Apple will

provide will make the company an ongoing participant in the use of a Mac or Newton. It may become commonplace to shop for and purchase software on AppleLink, for instance.

Mobile users are the initial audience for these services because they need an easily accessible source of news and an electronic-mail system when traveling, according to Peter Friedman, director of AOS. He said that there would be some system-level integration of information technologies into upcoming Newton personal digital assistants. AppleLink client software also may be bundled with future PowerBooks and desktop Macs, sources said.

One problem Apple may face in marketing AppleLink to consumers is its price structure: At \$37 per daytime hour for 9,600-bps access, plus additional per-character fees for downloads, Apple's is currently the most expensive of the on-line E-mail and conferencing services. CompuServe, by contrast, last week cut its 9,600-bps access fee to \$16 per hour.

Friedman would not comment about possible reductions and simplification of AppleLink rates. He did say AppleLink prices will not increase as a result of the planned service enhancements.

By using the America Online and General Magic technologies, Apple may be in a position to make its service something of a standard, sources said. America Online is working to license its interface to other companies.

General Magic's agent-based intelligent communications technology, known as Telescript and due in 1994, also has been licensed to AT&T Co., which is building its own electronic marketplace (see MacWEEK, Feb. 8). The two services are likely to be connected so that users on one service will be able to access information on the other service.

Apple is in the midst of establishing partnerships with information providers who will offer new information, communications and entertainment services that the company will discuss in more detail when the negotiations are completed, according to Apple's Friedman.

The Apple Online Services are part of a new "systems-oriented" marketing strategy, parts of which have emerged in recent weeks. "When we sell you something, that's really the beginning of the relationship," Sculley said last week. □

mobile93

From Page 1

one of the first communications add-ons for the Newton personal digital assistants will be Motorola Inc.'s NewsCard, a paging message receiver. The device, as yet unpriced, will let Newtons capture electronic-mail messages, news and information updates broadcast on pager networks.

► **Automated banking.** Intuit Inc. of Menlo Park, Calif., said it will ship several new versions of its Quicken automated banking application that use the communications capabilities of General Magic's Telescript.

Scott Cook, Intuit CEO, said Quicken will run on Newtons, personal communicators that use General Magic's Magic Cap operating system, and Telescript-enabled Macs and Windows computers, once they become available.

► **Data freight.** Larry Ellison, president and CEO of Oracle Corp. of Redwood Shores, Calif., said his company will deliver one-way information services, known as data freight, to handheld and desktop computers within three years. He said Oracle will send data over a 1.544-Mbps wireless network it is co-developing with McCaw Cellular Communications Inc. of Kirkland, Wash.

"We think we can build battery-powered, addressable receivers for less than \$100," Ellison said. The advantage of the system is its point-to-multipoint connectivity; one would need to send a file just once to reach any number of users. "That gives us the ability to deliver an update of DOS to every PC in North America for approximately \$7," Ellison said.

► **PCS.** The wireless personal communications services (PCS) schemes proposed to

the Federal Communications Commission in 1991 by Apple and other vendors may get quick approval under the Clinton administration, speakers said.

"They (the administration) will try to be the spark that ignites new services," said Joel Winnick, an attorney at the Washington-based firm of Hogan and Harston.

Winnick, a Clinton campaign insider, said he believes PCS networks, which will let devices communicate using very low-power transceivers that work both indoors and outdoors, could be in service as early as 1995.

Users at the conference were a bit in awe of the possibilities for mobile computing and somewhat vexed by the density of vaporware at the conference.

For example, at Apple's booth there was a change in the typical Newton display. Instead of the sleek black note-taker prototype Apple has been showing under glass since last fall, there were two new designs: a slate with integrated keyboard and a lunch-box-size system with a screen on its large side and a pen.

A booth worker was quick to point out that both systems were conceptual prototypes and would not necessarily become Apple products.

"We've been through hurricanes and disasters during the past year, and we want to know if this wireless technology can help in those situations," said an executive with a major insurance company.

He said the vendors he'd heard at mobile93 seemed to be forcing real-life business situations to conform to the limits of their technology rather than offering practical solutions. "After sitting here for two days, I'm wondering if this isn't a technology looking for a business problem," he said. □

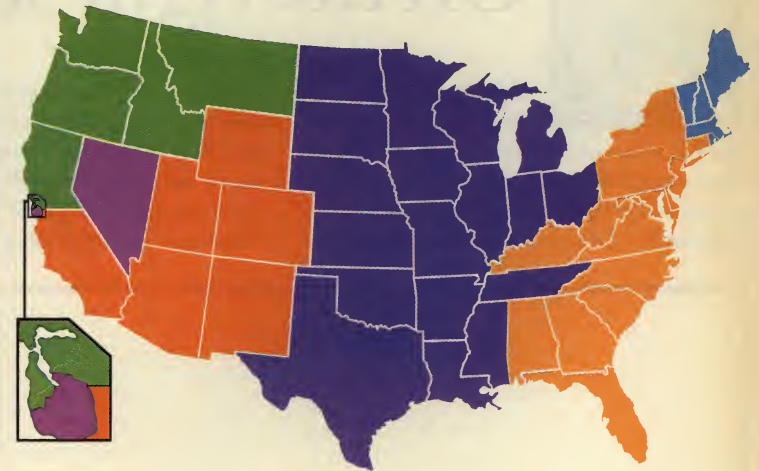
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Looking ahead



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March 8	GW Spec. Rpt. Database add-ons	Feb 25	Feb 23
March 15	Scanners	March 4	March 2
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March 29	Applications development Data-analysis hardware	March 18	March 16
April 5	Electronic mail	March 25	March 23
April 12	GA Spec. Rpt. Video	April 1	March 30
April 19	Graphics hardware	April 8	April 6
April 26	Monitors	April 15	April 13



On the right side of connectivity

If the devil is in the details, as so many were quick to point out last week after the president's non-State of the Union address, then a careful look at a videotape of the event reveals a lot. John Sculley, for example, publicly advertised

his willingness to sacrifice by wearing a tie that was surely not purchased in this decade. Then there's the small matter of on whose right-hand side he was sitting, although that symbol may not be as revealing as the tie. After all, Alan Greenspan is arguably more powerful than

Mrs. Rodham Clinton and the rest of the government put together, and the right-hand side *he* was occupying belonged to Mrs. Gore.

But any way you slice it, you don't sit next to the first lady at any important function without being very well-connected. Judging by that cri-

terion, Sculley is as plugged in as he needs to be.

In fact, being well-connected might be the new motto at Apple. The recent arrival of Express Modems for the Duos shows Apple's commitment. Those who wonder why these modems are priced so aggressively and why there is no third-party competition need only remember that commitment. Wise sources insist that Apple is actively trying to wean third-party developers away from modem hardware for the Mac because future DSP-equipped and RISC-based models will provide modem functions on-board.

Now those with any depth of experience with Apple's previous modem products may question the wisdom of this strategy. You can add to this the general perception that the Express Modem, relying as it does on the Duo CPU for most of its horsepower, slows down the Duo noticeably. But things can only get better. As far as accessing our data goes, one day we'll be able to be everywhere at once, even if we're nowhere at all.

European connection. Any number of the newly installed techno wonks in Washington will tell you that Europe has a few lessons available free for the learning.

Apple already has provided the French with high-speed cellular modems for the PowerBook, and those of us in North America eventually will have the same free-ranging option. We'll only have to wait until the supporting technology, including the requisite digital cellular network, is in place.

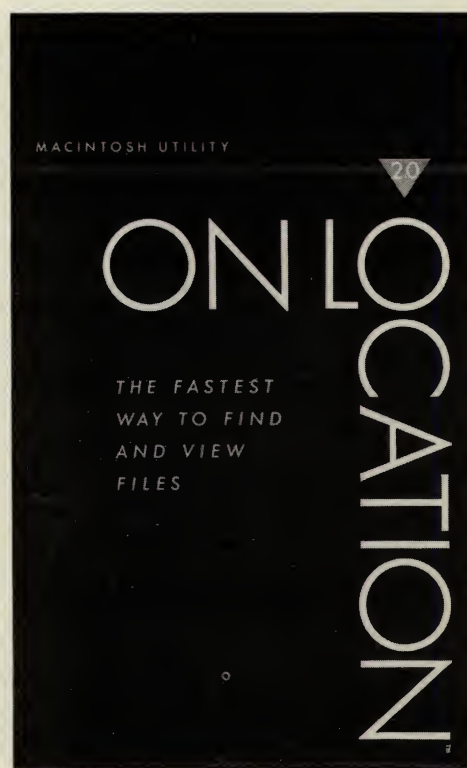
Eye of the Cyclone. If the Knife's E-mail is at least as accurate as Bob Dole's call-in line, there's a lot of pent-up demand out there for a Mac with the specs of a Cyclone. Those of you who are considering postponing a purchase now in favor of the Cyclone might want to reconsider your strategy. The Knife reports that Apple's original goal of a May ship date for the first for-real multimedia Mac looks like a sure no-go. Rumors are circulating that Apple's first beta release of the operating system software was retracted after only a few weeks in the field, and no replacement has since been shipped to take its place.

While we're waiting for the Cyclone to hit, we also can contemplate the arrival of a truly quick incarnation of QuickTime. Sources are whispering among themselves that Apple is seriously considering setting QuickTime in silicon some day, probably when it's satisfied that QuickTime is sufficiently stable. That would enable Apple to put QuickTime on the logic board of some future machine. Perhaps QuickTime 2.0 will meet the test.

By now we're all getting pretty good at this waiting business. One source reported to the Knife that a call to Apple's employee purchase program inquiring about the availability of a Quadra 800 produced outright laughter. A similar inquiry about the availability of the 950 revealed that Apple employees will have to wait about a year and a half for the big box '040 Mac. And who knows if the 950 will even be in production then? □



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The Editing Aces Suite really takes off with Adobe Premiere™ 2.0, a \$695 value, and MediaGrabber video capture software.



RasterOps invented video on the Mac® and Apple® used it to get QuickTime® off the ground. So call us today to become a QuickTime Editing Ace.



To get in on the action or to order your free 13"x 24" Editing Aces poster, call RasterOps at 1.800.SAY.COLOR.

Featuring

Full motion Full screen

NOW SHOWING IN 24-BIT TRUE COLOR
ALL WITH 16-BIT, CD QUALITY SOUND (with MediaTime)
Only by RasterOps



The Editing Aces Suite features MoviePak, the RasterOps® solution for full-motion digital video recording, full-screen playback, and print-to-tape capabilities. All in a single slot solution for any Macintosh® from the IIci to the Quadra®. MoviePak even offers the *widest range of compression* in the industry.

The suite also includes MediaTime, with 24-bit real-time digital video and graphics display, and 16-bit CD quality sound - a RasterOps exclusive.

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THE ART & SCIENCE OF COLOR™

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MoviePak is compatible with currently available RasterOps video graphics cards. Older versions may require an update. For additional information, please call 1-800-SAY-COLOR.

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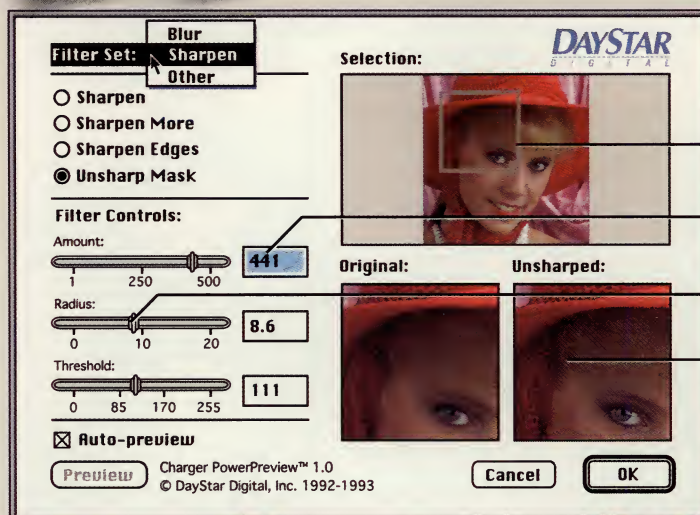
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